NATIONAL PETROLEUM NEWS

# Gas Conservation for Santa Fe Springs Before the Wells Spud In

By W. E. Green
N. P. N. STAFF WRITER

LOS ANGELES, Sept. 1

EIGHTY wells in the old Santa Fe Springs field, southeast of Los Angeles, are racing on a 6000-foot course straight into the ground for an unknown prize.

Over 100 more wells are getting ready to join the race.

Oil field workers who, until a month ago were idling in doorways, cannot be found now, for they all have jobs.

Steel derricks and equipment for drilling deep wells have been cleaned out of southern California supply depots. Factories in the east have already speeded up their production to turn out supplies, some of which will be shipped to California by express. Freight will be too slow.

What is under way now at Santa Fe Springs bids fair to be the strangest oil field development program the oil industry has ever embarked upon.

Unknown as yet is the exact nature of the oil found in this new 6000-foot sand; unknown to more than a few the amount of production in the discovery well, or the thickness of the sand there; in fact most of the facts that set off men and companies in straining effort to reach the sand first.

All that information is bottled up in one company, the Wilshire Oil Co., whose Buckbee No. 1, completed July 26 stands today, location fenced in, derrick floor and cellar boarded up, a "mystery well" attracting more comment than any other well drilled in California in years.

In spite of the fact so little is known as to the nature of the structure towards which 80 wells are already racing, oil company operators and engineers are even now planning to develop what they may find there in the interests of conservation. There is known to be excess gas produced with the oil in the Wilshire "mystery well" and it is likely this will be pumped into a higher structure already known to exist in the Santa Fe Springs field through its earlier development.

The Santa Fe Springs field was at the height of its earlier development just about five years ago. In August, 1923, it was producing at the rate of 322,000 barrels a day of crude containing 37 per cent gasoline from the Meyer sand. By August, 1927, production at Santa Fe Springs was down to 40,000 barrels a day.

If output from the new sand at 6000 feet is anything like as productive as structures developed in the same field in 1922 and 1923, Santa Fe Springs may again have a material effect on total production in California.

It is believed that wells can not reach the new sand inside of 100 days, so that the wells now drilling cannot be completed until the latter part of December or possibly January.

*With the location fenced in and the bottom part of the derrick boarded up, the Buckbee No. 1, of the Wilshire Oil Co., in the Santa Fe Springs field, has remained a "mystery well" as to its performance, although it was drilled in more than a month ago*

At Santa Fe Springs today 70 new holes were drilling, 10 old wells were being deepened, and in addition there were 24 locations, 17 building rigs, 20 completed rigs and 25 wells rigging up, making a total of 166 operations. New wells are being spudded almost daily and it is expected that 200 wells will be drilled during the present campaign, and the total number may reach 300.

The California State Mining Bureau, oil and gas division, has announced it would require the cementing of three strings of casing. The first will be stovepipe or surface casing to be cemented at about 1000 feet from the surface, ranging in size from 16 to 20-inch. Holes will start at around 25 inches.

The next string, to consist of 11¾ to 13⅜-inch, will be cemented just above the Meyer zone, approximately 4200 feet. The last water string will be cemented just above the new Buckbee zone at about 5800

feet and will consist of 8⅝ to 9-inch. The oil strings will consist of either 5¾ or 6⅝-inch, according to present plans.

Approximately 100,000,000 pounds of casing will be used in a program of 200 wells, only taking into consideration the two water strings, and not counting the surface casing or stovepipe, or the oil string.

The first string just above the Meyer sand will require about 240,000 pounds to the well or a total of 48,000,000 pounds for 200 wells, while the second string just above the new sand will require about 256,000 pounds to the well, or 51,200,000 pounds for the 200 wells.

Of the 200 wells, as the first estimate of number to be drilled, fully 150 will be new drilling jobs, leaving 50 for deepened holes. Probably 150 steel derricks will be used at least, to about 50 wooden derricks.

Heavy duty equipment is necessary. General Petroleum Corp. has ordered four Hild electrical differential drive outfits to date. Heavy duty pumps are being placed, draw works and other equipment is to be in keeping. Drilling difficulties will not be more numerous than at Long Beach or at other deep hole fields.

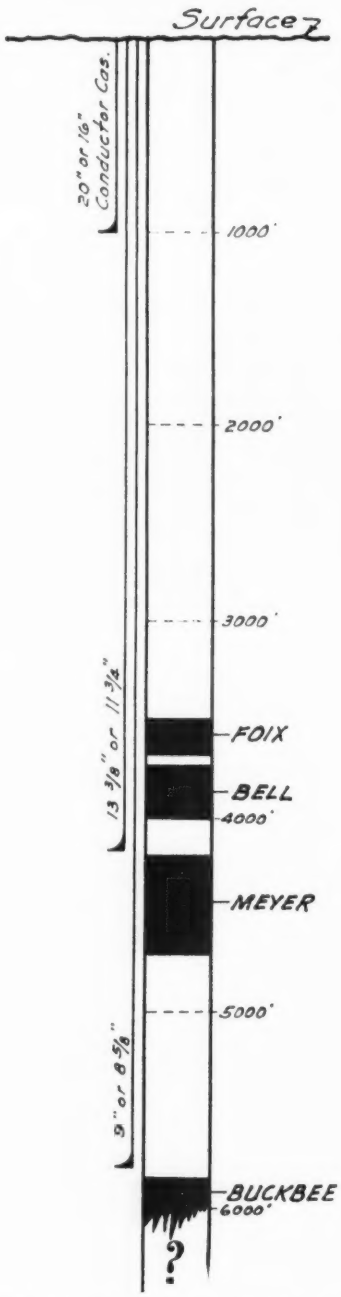
Operators are well acquainted with formations to be drilled to a point just below the Meyer zone. It has been decided that coring will begin at 5500 feet in the first several holes for the information not now at hand. On Aug. 31 four wells were drilling below 5000 feet and in a few days they will start coring, information secured in these four wells being furnished other operators in the field.

The first week after the Wilshire well came in saw all derricks in stock sold and being erected in the field. Steel derrick manufacturers started at once working their forces 24 hours a day and sufficient orders are on hand now to keep the plants running another month at least.

Stocks of needed equipment were cleaned out at supply houses in less than a week. Boilers are at a premium and much equipment is being shipped from back east. Many items have been shipped to California by express. Practically every drilling contractor in California had idle equipment, but the case was reversed in a week. The Texas Co. and General Petroleum are contracting some of their work, doing about half of their drilling with their own men and equipment.

Operators and engineers realize from experience that there will be no trouble over moving the oil from the field and in most instances there will be plenty of storage space available. They also realize at the very start that the job of conserving the gas will be one of the biggest jobs ever attempted by petroleum engineers in California.

The discovery well is making around 3,000,000 cubic feet of gas



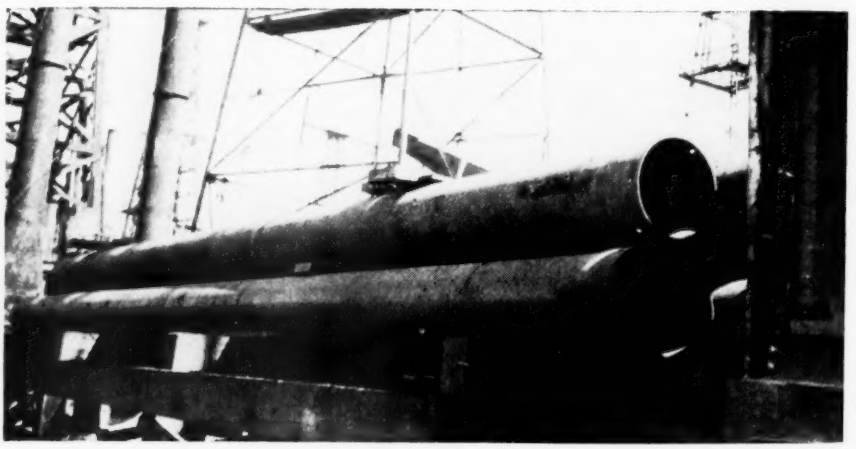

*Approximate casing program for deep wells in Santa Fe Springs field graphically shown. Average thickness of upper zones is also shown*

a day and every new well is expected to make close to that much—at least the average will be better than 1,000,000 cubic feet to the well. If 200 wells are completed in four months, or thereabout, this will give the field at least 200,000,000 cubic feet daily, and possibly double this amount.

With this knowledge facing them, the engineers lost no time in meeting for informal discussions of what could be done. The engineers have the hearty cooperation of the company executives. Since the machinery for making such a study and laying plans was already at hand on account of the gas conservation movement underway in California for several months, tentative plans have already been approved. Engineers held several meetings and decided that a cooperative plan could be adopted to pump the surplus gas from the deep sand wells into the partially depleted Meyer zone between 1500 and 2000 feet above the new deep zone.

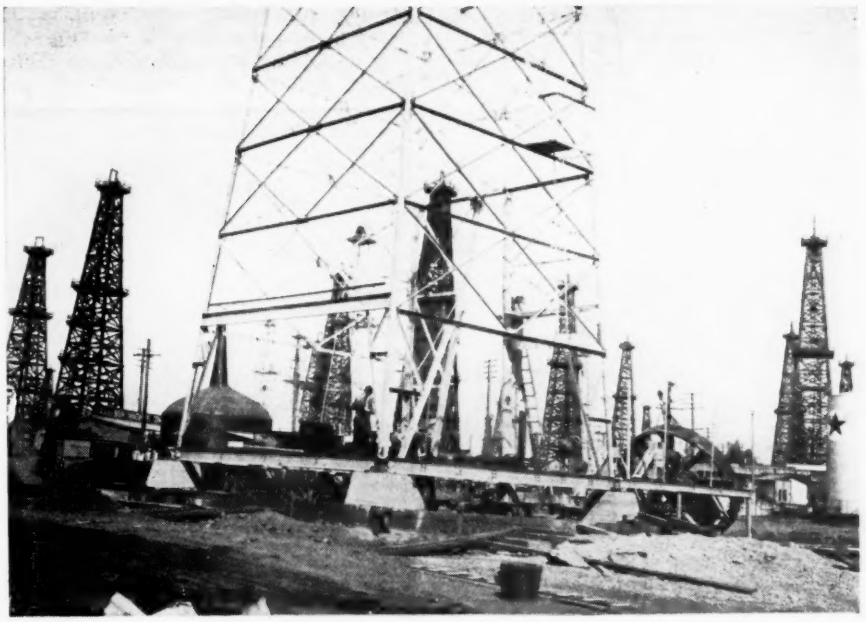
Engineers of the Union Oil Co. immediately set the ball to rolling by rigging up compressors to pump dry gas from its natural gasoline plants into the Meyer zone through two old wells. It was found the sand would take the gas at the rate of 250,000 cubic feet daily per well under a pressure of 225 pounds. At Ventura avenue, for instance, it requires from 1250 to 1600 pounds to make the Ventura avenue sand take the pumped-in gas.

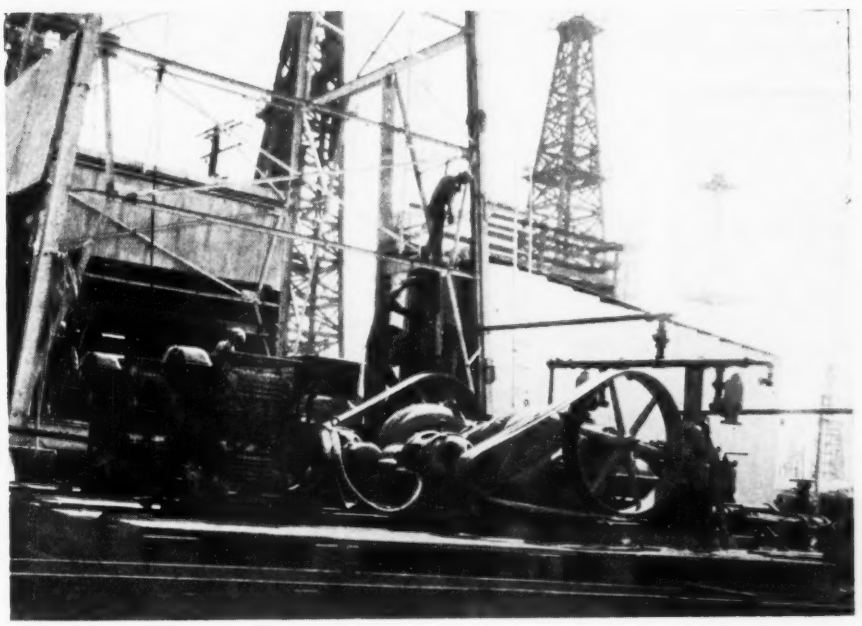
Attorneys for the various major companies have already held a conference to discuss and study the legal phases of the gas conservation plan. Independent operators are to be asked to join in the plan, pro rata, and the details are gradually being worked out. So far the plan has to do only with the disposition of the gas that cannot be used in a proper manner in other ways. Naturally this gas will be run through the natural gasoline plants first. All interested parties are to join in some manner to finance pumping the gas into the

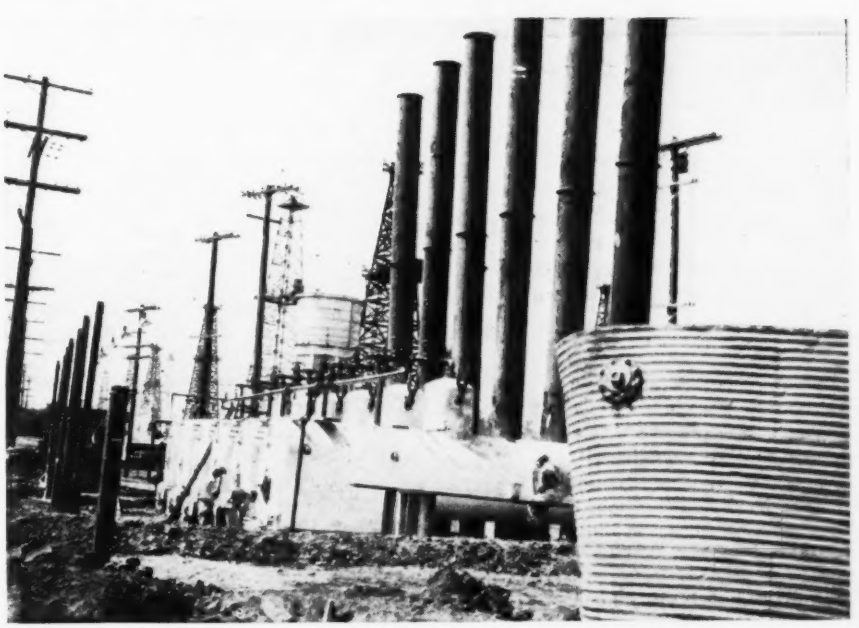


*Slip joint surface casing, 18⅝ inches in diameter, on the rack at one of Geo. F. Getty's wells at Santa Fe Springs. Made by the American Seamless Tube Corp. It weighs 84½ pounds to the foot and 1000 feet will be cemented in the hole*

## *Santa Fe Springs Comes to Life Again: Wells Rig Up to Drill to 6000-Ft. Sand*







*Upper—An Emsco steel derrick being erected at Santa Fe Springs. Note concrete pillars. Floor under derrick is solid concrete around cellar, walls of which are also cemented.*

*Middle—Heavy duty Gardner-Denver slush pumps in place at General Petroleum well at Santa Fe Springs. Hild differential drive is being installed*

*Lower—Battery of six boilers on The Texas Co. lease at Santa Fe Springs along the main highway through the field*

Meyer zone, but so far just how the gas is to be paid for is unknown. The owners of wells still producing from the Meyer zone are to be benefited and just how they shall join in the financial arrangements is an unsettled question.

The handling of the expected large production from the new deep sand has already been discussed in a general way. Since practically every large company has a pipe line into the field, in addition to several Independents, it is not thought that the situation can become acute.

Only preparatory steps have been taken to date to handle the large amount of gas expected from the deep sand. Operators of natural gasoline plants in the old field are securing preliminary figures and estimates in addition to their old plants or for new plants, but as far as is known no contracts have yet been made. No contracts are expected to be awarded until one or more wells are completed to give a better idea of what can be expected.

# Eastern Refiners to Hear Technical Discussions

CLEVELAND, Sept. 5

THE fall meeting of the National Petroleum Association this year is to be a technical meeting no less than the spring gathering. The meeting is to be at the Hotel Traymore,

*E. M. Lyons, Tiona Refining Co., Clarendon, Pa., president of the National Petroleum Association which holds its annual meeting at Atlantic City Sept. 19, 20 and 21*

Atlantic City, Sept. 19, 20 and 21.

On Wednesday morning, the first day, a meeting of the trustees will be held. The events at other sessions are scheduled as follows:

**Wednesday afternoon, Sept. 19**

Opening address of President E. M. Lyons, Tiona Refining Co.

Report of treasurer.

Message from Judge C. D. Chamberlin, former secretary and general counsel of the association.

Report of the department of manufacture by P. S. Tarbox, Independent Refining Co., trustee in charge of that department.

Address, "The Refinery Heat Machine, Old and New", by H. A. Ross, combustion engineer, Warren, Pa.

Address, "Pipe Stills" by D. G. Brandt.

A round table discussion of manufacturing problems led by H. S. Bell, refinery engineer, and five other speakers as follows: L. C. Jamieson, Viking Oil Corp., Warren, on "Cold Settling"; D. G. Brandt on "Vacuum Distillation"; by D. W. Hovey, Waverly Oil Works on "Modern Distillation"; MacLean Houston, United Refining Co., on "Maintaining Production" and J. B. Northrop, Ohio Valley Refining Co., on "Filter House Practice".

H. C. Mougey, chief chemist of the General Motors Research Corp., will present a paper on "Possible Future Developments of the Internal Combustion Motor."

**Thursday morning, Sept. 20**

Group meeting of the department of manufacture dealing with the cooperative engineering work of the association, discussion led by Howard H. Greene, Kendall Refining Co., O. P. Keeney, Keeney Oil Co., and G. C. Davison, Tri-State Refining Co.

**Thursday afternoon, Sept. 20**

"Burning History", by Houston Dunn, National Petroleum Mutual Fire Insurance Co.

"Work of the Fire Marshals Association", by James H. Herbert, Conewango Refining Co., president of the fire marshals' association.

"What Oil Heating Means to the American Home and To the Oil Industry", by E. Earl Newsom, assistant director of the Oil Heating Institute.

"Facts Significant in the Profitable Management of Petroleum Refining and Marketing", by Henry W. Ralph, New York.

**Friday Morning, Sept. 21**

"What the Association is Doing in the Traffic Field", by Willis Crane.

Report of the Department of Standards and Tests, by A. W. Scott, Empire Oil Works, trustee in charge of that department.

Report of the association's statistical service, by a speaker to be selected.

*Fayette B. Dow, Washington, general counsel of the National Petroleum Association, who has arranged a timely program for the association's annual meeting at Atlantic City*

"The Price of Prosperity in the Petroleum Industry", by Joseph E. Pogue, economist.

Remarks on the work of the association by Fayette B. Dow, general counsel.

## The Texas Co. Will Build San Antonio Refinery

CLEVELAND, Sept. 5.—The Texas Co. will start at once construction of a refinery at San Antonio, Tex., to operate on crude from the Winkler, west Texas field, according to R. C. Holmes, president of the company. The plant will have a capacity of from 3000 to 5000 barrels a day and will be a complete refinery, including cracking facilities.

A branch line will be laid from the company's main 12-inch line from Winkler county to Houston. This line will be about 75 miles long and probably will be 4-inch. Products from the refinery will be distributed in a narrow territory around the refinery, the rail rate up to 120 miles being favorable, Mr. Holmes says. Trucks may also be used to some extent in the marketing of products from the refinery.

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LOS ANGELES, Aug. 31.—Joseph Chalmers, connected with the Bureau of Mines station at Bartlesville, Okla., is spending several days in California making an intimate study of the plans for repressuring and storage of gas and is being lended every assistance by the engineers connected with this movement.

# The New Q.D.A. Divorces Tank Wagon From Service Station Prices

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, Sept. 1

DETAILS of the new tank wagon price structure to prevail in Standard Oil Co. of Indiana's marketing territory after Oct. 1, are slowly becoming known in the trade.

Standard officials have taken the new Q. D. A. contract out to their 27 district headquarters and explained every obscure provision. Other marketers are now busy doing the same for their sales executives.

The new Q. D. A. is still a quantity discount agreement. Large buyers from tank wagon will enjoy lower prices than small buyers. But it is not at all like the old one. There are three big differences, besides a number of small ones. Here are the big ones:

1. The retail dealer's spread will be much smaller after Oct. 1 than now. It will shrink from a published maximum of 5 cents to 3 cents for the best class of dealers.

2. The new Q. D. A. will be much simpler. It has only three brackets. The oil company will no longer have to keep books for all its customers. Every month's business stands alone, with no annual readjustment of gallonage figures.

3. The graduated price scale has shifted its base entirely. It will not be figured on the tank wagon price after Oct. 1, but on the filling station (retail) price. The old tank wagon price will still exist but it will have lost its importance after this month. It will still stand though, and be quoted, mostly as a farmer's price.

The new contract form, verbatim, as it will be offered to the retail trade in the middle west by several of the major companies in a few days, is reproduced on this page. Study of it shows that the gross margin of the resale agent depends on the volume of business he does, as follows:

| Gallons | Cents |
|---|---|
| 500 or more a month | 2 |
| 2000 or more a month | 2.5 |
| 6000 or more a month | 3 |

Looking at the table of figures by itself, a person would assume that buyers of gasoline from tank wagon who take less than 500 gallons a month would pay the retail price, but that is not true. The old tank wagon price remains in the picture for their benefit.

Farmers and other small buyers from tank wagon will get the benefit of the tank wagon price. But it must be remembered that the tank wagon price stands alone, and is not a part of the main price structure. The filling station price can move up or down, taking its Q. D. A. with it and not change the tank wagon price at all.

The new contract provides that buyers from tank wagon who take between 500 and 2000 gallons a month will pay 2 cents a gallon less than the retail (filling station) price. That 2-cent spread remains the same, no matter what the retail price may be. The contract also provides that buyers from tank wagon who take less than 500 gallons a month pay the tank wagon price. That happens to be 2 cents less than the retail price right now, but the contract

## The New Q. D. A. Form Effective Oct. 1

T. W.....

THIS AGREEMENT, made at .....this ....., 192....., by and between....., party of the first part, hereinafter styled SELLER, and..... of....., party of the second part, hereinafter styled BUYER, WITNESSETH:

That the SELLER agrees to sell and deliver, by and through its tank wagons or trucks, and BUYER agrees to purchase and receive at his place of business at ..... Gasoline, from ....., 192....., until....., 192....., inclusive, and the BUYER agrees to pay for same at the prevailing tank wagon market of the SELLER at ..... on the date of delivery.

In consideration of this agreement in case the total deliveries to the BUYER, shall amount to the quantities as shown below during ANY ONE CALENDAR MONTH, said BUYER shall be entitled to discounts as follows:

**DISCOUNT**

Over 500 gallons per Calendar Month .....2c per gallon  Over 6,000 gallons per Calendar Month ....3c per gallon
Over 2,000 gallons per Calendar Month .....2½c per gallon

Said discounts shall be **OFF THE SERVICE STATION PRICE** of the SELLER at ..... on date of delivery, which on this date is two cents (2c) per gallon higher than the Tank Wagon price of the SELLER at ..... and will be paid or credited not later than the fifteenth (15th) of the month following. In computing discounts the difference between the Tank Wagon price charged at time of delivery and the Service Station price of the SELLER on that date shall be deducted from the total discount to be paid under this contract as discount already allowed.

If at any time the differential between the SELLER'S Tank Wagon market and its Service Station market at ..... should be changed the SELLER will notify the BUYER by registered mail.

To entitle BUYER to discount the sales tickets or invoices furnished by the SELLER at the time of delivery, must be sent to the SELLER not later than the 10th of the following month and the discount shall be figured therefrom.

In computing the quantity of gasoline under this contract there shall be included all special grades of motor gasoline purchased by BUYER on orders accepted by SELLER.

SELLER is not obligated under this contract to sell and deliver in excess of ..... gallons per year.

Deliveries subject to delays resulting from fires, differences with workmen, or from any other cause or causes beyond its control.

This contract is personal with the BUYER and may not be assigned without the consent of the SELLER.

This contract may be cancelled by SELLER at the end of any calendar month on 10 days' previous written notice to BUYER.

.....  .....

By .....  By .....

Party of the Second Part.  Party of the First Part.

gives no assurance it will stay that way.

Under the new set-up it will be possible to lower the retail price 2 cents, making it exactly the same as the tank wagon price, and not change the dealer's margin by so doing. But if that should happen, the farmer who buys from tank wagon and uses less than 500 gallons a month, would be paying the service station price at his own barn gate.

The new contract will be a stabilizer to prevent the spread of price wars. Suppose some price disturber, owner of a railroad oil station, should cut the retail price in Peoria, Ill., as has happened so many times in recent years. The major operators can meet that cut price at filling stations. The Q. D. A., based on filling station price, will protect their dealer customers. But the tank wagon price carried by rural tank wagons would not change. The disturbance would be confined to Peoria.

There is a third possibility that is not so probable. Promotion, fly-by-night companies, organized among farmers upon promises to cut prices to "member customers" can be met by an established oil company with a tank wagon price cut without disturbing the main part of the price structure and without bringing about a price war among the service stations in nearby towns.

The existing tank wagon price, 2 cents under the filling station price where it has stood for years, almost certainly will occupy that same relation on Oct. 1. If either price is changed between now and Oct. 1. they will be changed together because the new contract does not take effect before that time. After Oct. 1 the two prices may stay 2 cents apart, or the spread may be more or less than 2 cents, as the exigency requires, locally or generally.

Standard Oil Co. officials will not admit that they have any immediate intention of abolishing the 2-cent spread or of abolishing the tank wagon price, as such. The present spread may go on for a long time. But the terms of the new contract certainly make a way for the old fetish to be discarded. It looks now as if the farmer might some day pay a price for his gasoline in proportion to the service given him.

The story about the proposed changes in the Q. D. A. that appeared last week* was correct as far as it went, but it was incomplete. Some of the things predicted there have already happened. Special concessions to Chicago dealers have already been abolished. The old form of the Q. D. A. is in force in Chicago. There have been protests made by small dealers who were favored with secret rebates but the published price scale went into force any way.

Gradually the retail Q. D. A. is going out of existence. Owners of truck fleets all over the territory who used to enjoy the tank wagon price, although their trucks patronized filling stations, are beginning to pay the retail price flat. No oil company in this territory made such contracts with consumers without a 30-day concellation clause. As fast as contracts can be voided the discounts are being cut out.

After Oct. 1 there will be no Q. D.A. except the wholesale one, figured as a discount from the retail price, and it will give the jobbers of the territory a great deal of relief. Every dealer or big consumer will pay the tank wagon price for his gasoline when it is delivered. If his monthly volume entitles him to more than that on the new basis he will be given a check or a credit memo for the difference by the middle of the following month.

Keeping track of each dealer's gallonage no longer will be a chore for the oil jobber. Each dealer keeps his own tank wagon tickets and totals them himself. At the end of the month he turns them in to the oil company for audit, if he is entitled to anything. If he is not entitled to anything he can throw them away. If he loses some of them it is his own hard luck. The oil man will never know it.

All kinds of gasoline are figured in together. It can be the competitive grade, knock proof gasoline, tincture of Ethyl or high test—it all figures the same.

*See Aug. 29 issue of NATIONAL PETROLEUM NEWS, page 17.

# A.O.M.A. Offers Three-Fold Service to Jobbers

CHICAGO, Sept. 4

JIM GILMORE, secretary of the American Oil Men's association, has devised a lot of surprises for the oil men who attend the annual meeting in Detroit, Oct. 9, 10 and 11. Most significant is a series of three services which the association headquarters has prepared for the members. Each service will be presented in Detroit and the members will have a chance to accept or reject them.

Mr. Gilmore has surrounded himself with a staff of oil men, writers, statisticians and instructors and has formed a staff that might rightly be called a "faculty." They are preparing a correspondence course for filling station salesmen, in an effort to help oil jobbers teach their sales personnel to do real merchandising. An oil man will present the school proposition to the meeting.

H. E. Dosch, vice-president of the Rogers-Gano advertising agency will present a collective advertising plan which his company has worked out for Independent jobbers. The proposition is that small town jobbers can have the advantage of an advertising agency's service. They can have as good copy to run in their home-town papers as their major competitors use, by pooling their appropriations and paying for the service through the association.

S. E. Pearce of the firm of Pearce & Granata, public accountants, will address the oil men in Detroit on the matter of cost accounting. He will have a concrete proposition to offer them.

Mr. Gilmore has sent out questionnaires to his members on these matters and the response has been such that he feels justified in arranging the complete set-up in order to have something to show them at Detroit. He says his questionnaire on advertising agency service for oil marketers in small towns and rural districts drew an 80 per cent response, and literally dozens of them said they would advertise more in local papers if they could get creditable copy.

Neither of these propositions will be thrust down the necks of the membership against their will. Enough have subscribed already to the accounting and advertising plans to put them over. But all will be presented to everybody in the organization and those who like the movements will be at liberty to join in either or all of them.

Dixie Distributors Inc., two groups of Independent jobbers, one in Michigan and one in Wisconsin, who mutually sell "Dixie Gas, the Power to Pass," are holding their annual conference in conjunction with the A. O. M. A. this time. There are probably 60 or 70 of these jobbers and their mutual interests will bring them to Detroit with the rest of the association's membership.

### A. O. M. A. Exhibitors

Amco Sales Corp., Chicago.
American Oil Corp., Jackson, Mich.
Bennett Pumps Corp., Muskegon, Mich.
Canfield Oil Co., Cleveland.
Fleckenstein Pump Co., Grand Rapids, Mich.
Gladiator Manufacturing Co., Auburn, Ind.
Gilbert & Barker Mfg. Co., Springfield, Mass.
Heil Co., The, Milwaukee.
Indian Refining Co., Lawrenceville, Ill.
Martin & Schwartz, Buffalo.
Merit Equipment Corp., Cleveland.
National Cantube Co., Chicago.
Oil Products Appliance Co., Maywood, Ill.
Pittsburgh Equitable Meter Co., Pittsburgh.
Roxana Petroleum Corp., St. Louis.
Sharpsville Boiler Works Co., Sharpsville, Pa.
St. Louis Pump & Equipment Co., St. Louis.
The Texas Co., Chicago.
Tide Water Oil Sales Corp., Chicago.
Vacuum Oil Co., Detroit.
Union Metal Manufacturing Co., Canton, O.

# Little River Operators to Give Battle To Reiter-Foster Oil Corp.

TULSA, Sept. 1

THE mutterings of the Reiter-Foster Oil Corp. on the Little River proration, heard off and on for several months, took the form of application to the federal district court of the western district of Oklahoma this week and that court granted a temporary order restraining the state corporation commission and the attorney general of the state from enforcing the commission's order limiting production of the new south Little River field. The limitation imposed in the order is 1600 barrels per 40 acres.

The restraining order is returnable Sept. 8. It was "slipped over" on the Seminole operators, who drew the terms of the proration order issued by the corporation commission. No notice was given by the court that a restraining order was being sought, hence the Reiter-Foster people alone were heard.

Judge Ed S. Vaught, who issued the order, is new on the federal bench and apparently not so familiar with federal court practices as he will be after he has served for a while longer.

The Little River operators went into session on Aug. 31, the day after the order was issued, and at a general meeting voted to take immediate action to combat the Reiter-Foster move in opening to capacity its wells, which occurred some days before.

The first step was to ask Judge Vaught to dissolve his temporary order, thereby clearing the road for action of a drastic nature against the offending oil company. Judge Vaught agreed to hear the application for dissolution of the order on Sept. 4, and operators were confident that he would grant their request.

The next step after the federal order is out of the way will be for the corporation commission to cite the Reiter-Foster company for violation of the order restricting production. At the same time, the state, through the attorney general and the corporation commission's attorneys, will go into the district court of Seminole county and ask that a receiver be appointed for the Reiter-Foster lease.

Such receiver would be merely a policeman on the lease to see that production was held to the figure named in the present commission order or the one that will be issued to govern production in Little River after Sept. 10, date of expiration of the order now in force.

If the operators in Little River have their way, the Reiter-Foster company will quite thoroughly comply with this and future commisison orders. The temper of the meeting on Aug. 31 was clearly shown. There was no disagreement with the assertions of spokesmen for several companies that the matter is too critical to be passed over—that the Reiter-Foster company, with its single 40 acres, must not be allowed to upset the policy which the rest of the operators have decided is for the best interest of the industry. Reiter-Foster stands alone in its action.

The attitude of the state of Oklahoma was shown in a telegram received during the meeting of operators on Friday. J. Berry King, assistant attorney general, wired:

"Please advise your fellow members of the legal advisory committee that the attorney general recognizes the crisis confronting the oil industry and the consequential loss to the state which would accrue if the proration plan now in force in the Little River field is to be destroyed.

"This office after 18 months is convinced the present plan is the fairest and most effective plan for all parties interested, including the state, and we should regret very much to encounter a situation that would disrupt the plan.

"After your meeting today, we will be glad to confer further with you and the corporation commission with reference to the temporary injunction issued Thursday out of the federal court of the western district of Oklahoma."

The state has given its hearty support to the operators' policies ever since the Seminole district situation called for concerted action.

Field records show that the Reiter-Foster people, who stand up in opposition to the restrictive policy which is now practically world wide, started violating the commission order on Aug. 21. At the close of the week its production was in excess of 4000 barrels daily, as against the 1600 permitted by the commission's order. This company has on other occasions threatened trouble and special meetings have been called just to plan something that would keep it in line.

Although Reiter-Foster agreed after its first well on its 40-acre lease was drilled to restrict it in production after completion—the company was a party to the cooperative drilling program to test the south Little River area, offsetting owners having agreed to pay $10,000 each if the Reiter-Foster's first well was dry—the company threatened to break its agreement.

It argued that it needed income. The Carter Oil Co., which has been vigorous in its advocacy of production restriction, offered the Reiter-Foster a crude oil purchase contract, agreeing to make advance payments of $50,000 each for three months, or a total of $150,000.

Carter was to charge no interest on this money and was to be paid back in oil, when as and if produced. Reiter-Foster in a special meeting, through its president, Paul S. Ache, raised objection to the long period of the contract that had been offered —five years.

The Carter offered to cut it to three years. Then Ache wanted a further concession. He thought his company should have the privilege of paying off the $150,000 at any time it saw fit, thereby terminating the contract. He believed the time might come when a premium would be offered for his oil.

To which the Carter retorted that the only consideration it was to get was the purchase of the oil at the

## Temporary Restraining Order Dissolved

(By Telegraph)

TULSA, Sept. 5.—At a hearing in Oklahoma City Tuesday Federal Judge Vaught dissolved the temporary restraining order obtained last week by the Reiter Foster Oil Corp.

This order had stopped the state corporation commission from enforcing the proration order in Little River. The Judge in open court said that his action had been too hasty.

Hearing on the application of Heiter-Foster for a permanent injunction is set for Sept. 8, but the court indicated that some delay might be occasioned in getting two more judges to sit with him, this being a constitutional question and requiring three judges.

Dissolution of the temporary order leaves operators free to seek other relief, such as citing the offending company for violation of the commission's order and seeking appointment of receiver for the lease.

A conference was called for today with the Reiter-Foster to see whether settlement could be made, without taking these extreme measures.

posted price and that Ache's proposal would merely make it a loan without interest. The contract was not signed and after some long distance telephoning to New York, where Reiter-Foster's financial backers—Pettigrew & Meyer—are located, the company agreed to the extension of the shut-in time which the other operators wanted.

Such extension brought the restrictive period up to Aug. 15, Reiter-Foster's and other company's test wells being held to nominal production. On Aug. 15 the field started producing at the rate of 1600 barrels per 40 acres under a new commission order.

Umpire Collins told the meeting Friday that he had talked to Ache when the company started producing its wells wide open. Ache said that royalty owners were threatening action to cancel the Reiter-Foster lease and to collect damages unless full production were taken.

The umpire said he then asked Ache whether he would pinch in again if he—the umpire—would get the royalty people straightened out. Ache said he wouldn't, shifting his argument to that of feared injury to the wells if they were kept pinched. One well had "died" and would not flow naturally. In their application to the corporation commission, the Reiter-Foster made no use of the contention that royalty owners were hostile.

That certain royalty owners are causing trouble was confirmed by Dana H. Kelsey, vice-president and general manager of the Prairie Oil & Gas Co. The Prairie owns a lease adjoining that of Reiter-Foster. Its wells also have "died," although it has made no outcry about it.

Mr. Kelsey said, however, that Rogers Brothers, of Holdenville, who own royalty under the Reiter-Foster lease, also own royalty under the Prairie lease and that they have threatened suit against the Prairie if it does not open its wells to capacity the same as the Reiter-Foster has.

Mr. Kelsey said the Prairie would go ahead and take the chance, complying with the commission's order, for a time sufficient to enable the corporation commission to clear the industry of the tangle the federal court set up when the restraining order was issued.

Royalty owners tried to cause trouble last year on the prorating of the original Little River production. They were licked in the supreme court on motion to vacate a restraining order they had obtained in the district court at Wewoka. The case was not heard on its merits.

That such objectors haven't the support of the recently organized Mid-Continent Royalty Owners' Association was indicated by the remarks of Guy Woodward, attorney for the association, at the Friday meeting of operators. Mr. Woodward asserted that the association is pledged to the support of the operators on any constructive measures they adopt, realizing that the lessee and operator is best qualified by knowledge of the state of the industry to determine the policy.

Mr. Woodward has been added to the legal advisory committee of the Seminole operators and a closer tie-up than ever before appears to exist between the royalty owners and producers.

The Reiter-Foster company is comparatively unknown to the Mid-Continent industry. Originally it was controlled by interests seeking to develop a wildcat structure in Texas. It then passed into the hands of a house known as Pettigrew & Meyer.

## Coming Meetings

**Independent Oil Men's Association of New England, Middletown Golf Club, Middletown, Conn., Sept. 12.**

**Wisconsin Petroleum Association, Wausau Hotel, Wausau, Wis., Sept. 12.**

**National Petroleum Association, Hotel Traymore, Atlantic City, N. J., Sept. 19, 20, 21.**

**Oklahoma Oil Jobbers Association, Oklahoma City, Okla., Huckins Hotel, Sept. 28, 29.**

**North American Gasoline Tax Conference, Peabody Hotel, Memphis, Tenn., Oct. 1, 2, 3.**

**National Safety Council, Petroleum Section, Hotel Pennsylvania, New York City, Oct. 1 to 5.**

**Big Four State Jobbers, Kansas City, Mo., Oct. 3, 4, 5.**

**American Oil Men's Association, Hotel Statler, Detroit, Mich., Oct. 9, 10, 11.**

**Wisconsin Petroleum Association, Green Room, Schroeder Hotel, Milwaukee, Oct. 17.**

**Petroleum Division, A. I. M. E. Tulsa, Oct. 18 & 19.**

**International Petroleum Exposition, Tulsa, Oct. 20 to 29.**

**California Natural Gasoline Association, Los Angeles, Nov. 13, 14.**

**Independent Oil Men of America, Stevens Hotel, Chicago, Nov. 19, 20 and 21.**

**American Petroleum Institute, Stevens Hotel, Chicago, Dec. 4, 5, 6.**

**Nebraska Independent Oil Men's Association, Municipal Auditorium, Hastings, Neb., Dec. 4, 5, 6.**

**Wisconsin Petroleum Association, Schroeder hotel, Milwaukee, Dec. 12.**

## Prairie Oil & Gas Party Flies Over Seminole

TULSA, Sept. 1.—A group of Prairie Oil & Gas Co. officials this past week made their first inspection of producing properties from the air. The group included Dana H. Kelsey, vice-president and general manager, and Horace C. Fitzpatrick, director, who flew from Independence to Tulsa in the morning, where they added W. S. Fitzpatrick, chairman of the board, and John A. Wolfe, production superintendent, to their party.

They continued on to Seminole, looking over all the fields from the lofty vantage point of the Stinson-Detroiter six-place cabin plane belonging to the Independence Air & Transportation Co., which they had engaged for the trip.

After circling over the pools of the greater Seminole area, the plane was landed at the Seminole City airport, where the party was met by a group of local superintendents. After spending considerable time visiting the Prairie properties in various parts of the great group of fields, the party returned to Tulsa, landing at 4 o'clock. The entire trip consumed less than one day, or about the time it ordinarily takes to drive from Independence to Seminole.

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### Theft of Pipe Is Growing

TULSA—Reports by oil companies that the theft of pipe and fittings from producing leases has reached greater proportions this summer than in recent years probably will lead to action by the Mid-Continent Oil & Gas Association.

Secretary and Counsel Harry H. Smith plans to take up the subject with the association's executive committee and probably to work through the association in the five states it covers.

Suggestions have been made to Mr. Smith that the association establish a bureau to which all thefts would be reported by members and bulletins issued to the membership describing the material stolen. It is proposed also that the association urge upon its members the marking, preferably with dies, all pipe, tubing and fittings stored in the field and at warehouses.

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LOS ANGELES, Aug. 30.—Edwin Higgins, managing director, California Chamber of Mines and Oil, returned early in week from his annual vacation, and on Tuesday entertained the Wildcat committee of the Chamber with a trout dinner to prove to the membership that he actually made several worthwhile catches. Several of the Wildcats still contend that Ed may have bought the trout—but he was given a vote of confidence at the conclusion of the dinner.

# Effective Methods Used in Handling Collections of Refinery Accounts

By J. F. McLaughlin*

*Prepared for Petroleum Section, National Association of Credit Men, Convention at Chicago, Sept. 4, 5 and 6.*

FOR many years the Indian Refining Co. carried on all functions of the accounting and credit departments in one general office. There were no district accounting or credit departments and hence matters pertaining to customers' accounts had to of necessity be carried on to a very large degree by correspondence. The distance between our general office and a customer's place of business was very often a thousand miles and it was consequently very difficult for a credit man to actually visualize the exact conditions that existed in the customer's area.

We were, of course, anxious to maintain our income at the highest point possible, but very often customers became irritated over collection letters which were more or less of an automatic nature. While my company was anxious to maintain a high degree of efficiency in the collection department, it realized that the loss of a customer's account meant a great deal. Considerable thought on this subject was then given to a collection system which would be effective but at the same time friendly and fair. It was not until after many experiments were made that the collection system now in effect in my company was adopted.

The first step in the adoption of the new system necessitated the decentralization of our accounts receivable records and credit and collection records from the general office to a district office. Eight district accounting and credit and collection departments were organized. In each office a credit manager was placed for the purpose of carrying on the credit and collection functions of the company for his particular district.

It was not very long after this change that our credit men gradually knew personally most of the accounts in their district. They not only knew the customer they were dealing with, but they knew the conditions in the customer's area. With this information they were able intelligently and tactfully to handle each collection situation that arose.

Before going into the actual working of the system, it is important to know that we hold each salesman responsible for the collection of his own accounts. We depend upon him to call regularly on his customers and to perform the sales and credit and collection functions that are necessary. It is only upon his failure to cooperate or show results that our collection department actually takes a direct hand in a collection situation.

The actual working of our collection system might be briefly laid out as follows: When a new account is opened and the credit manager has investigated the credit risk through the ordinary channels he establishes a limit on the account and for the purpose of clarity, in order to illustrate the different methods of handling the different products and the different kinds of shipments the average refiner makes, accounts will be classified in the following ways:

1. Tank wagon gasoline accounts.
2. L.C.L. lubricating accounts.
3. Tank and box car gasoline and oil accounts.

The majority of the risks that fall within the first classification are resale accounts and for the greater part moral risks. Our experience shows the average resale account sells its merchandise for cash and on this theory, it is only fair for the refiner selling to such an account to expect its payment on what we might term a load to load basis. The load to load basis is now very common and quite prevalent throughout the country.

After the terms have been agreed upon by both the seller and the buyer they are often forgotten about in the mechanical workings of the various bookkeeping systems. This weakness, however, can be easily overcome by placing the terms of sale to the account and the credit limit at the top of a customer's ledger sheet. As for example, if load to load basis is agreed upon with a credit limit of $75, the following notation is placed at the top of the particular customer's ledger sheet: "Load to load basis—$75."

The bookkeeper who posts almost daily to such accounts should carefully watch each debit posting made to such an account to see that the previous load of gasoline had been paid for. In the event it had not, a slip similar to the attached (Form 1761) made up in duplicate, should be made out by the bookkeeper and handed to the credit manager.

Such a slip will ordinarily bring about immediate collection of the account on the part of the tank wagon driver responsible for the account, or a reason for its non-collection. In the event collection is not made, the tank wagon driver will be able to furnish a report immediately to his credit manager and based on that report arrangements can be made to alter the original terms agreed upon.

Under old systems bookkeepers very rarely paid any attention to credit limits or terms and oftentimes customers who were supposed to receive only one load of gasoline received many loads before the matter was discovered. Whenever different terms

*Credit Manager, Indian Refining Co., Lawrenceville, Ill.

THIS ACCOUNT NEEDS

**ATTENTION**

SELL FOR

**CASH ONLY**

WHILE BALANCE IS OVER

CREDIT LIMIT $.....

If customer, in your opinion, is entitled to higher credit limit, give District Office your reasons immediately.

.....192

TO THE AGENT AT ..... STATION

.....
Customer's Name

.....
Address

HAS LAST INVOICE POSTED.....

$..... BALANCE ON LEDGER LAST CASH POSTED.....

.....
INDIAN REFINING COMPANY

*Form 1761 used by Indian Refining Co. bookkeepers to acquaint district credit managers and agents of fact that customer is slack in making payments and is taxing his credit limit*

**INDIAN REFINING COMPANY**
**MONTHLY ANALYSIS OF "ACCOUNTS RECEIVABLE CUSTOMERS"**

DISTRICT ..... STATION ..... NO. ..... MONTH ..... 192.....

| CUSTOMER'S NAME | CREDIT LIMIT | TOTAL ACCOUNT | AMOUNT NOT DUE AND ACCRUING | AMOUNT LESS THAN 30 DAYS PAST DUE | AMOUNT MORE THAN 30 DAYS AND LESS THAN 60 DAYS PAST DUE | AMOUNT MORE THAN 60 DAYS AND LESS THAN 90 DAYS PAST DUE | AMOUNT MORE THAN 90 DAYS PAST DUE | REMARKS |
|---|---|---|---|---|---|---|---|---|
| BROUGHT FORWARD | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Form 1627 used by Indian Refining Co. to analyze accounts receivable customers monthly*

are arranged, as for example weekly, or monthly terms, such terms can also be placed at the top of the ledger sheet so that the bookkeeper in posting to the account can watch its activity. The new method forces prompt attention within a period of not later than five days after the actual delivery of the gasoline.

Accounts under the heading No. 2 generally are lubricating accounts that are sold in L.C.L. lots of from two to 10 barrels. Such accounts are called upon often by salesmen and the salesman is compelled to collect the account since he is responsible for its conduct. At the end of each month a statement is made out in triplicate by the bookkeeper. The original is sent direct to the customer, the duplicate sent to the salesman in charge of the account and the triplicate retained in the district office for reference and collection purposes.

Assuming that the salesman covers his territory once every 30 days and further assuming that a credit manager has in his possession a copy of the salesman's route list, each account open in a salesman's territory should be reported upon immediately after his visit with the customer. Failure by the salesman to do this is brought to the sales manager's attention and if the account is then past due a letter is written direct to the customer requesting payment. As a result of the letter directed to the customer requesting payment, a collection file is started up and followed up every 10 days thereafter with either the salesman or the customer.

Under the third classification come the large purchasers of gasoline and lubricating oil in tank car and box car lots. As a general rule gasoline in tank car lots is shipped sight-draft bill of lading attached, but lubricating oil is sold on open terms. It has worked out very favorably when shipping lubricating oil in box or tank car lots to send a trade acceptance attached to the invoice.

The buyer, upon receipt of the carload and after properly checking the invoice, signs the trade acceptance and returns it to us and when the date of maturity arrives the trade acceptance is sent to the buyer's bank for collection. This procedure not only avoids the salesman returning to the buyer's place of business for the specific purpose of collecting the account, but it also raises the customer's credit standing in the eyes of his bank, for his bank knows by trade acceptances coming through for collection that the customer is keeping up his payments on what is probably his largest account. This is especially true where a distributor buys the greater majority of its products from one refiner.

Each month all accounts on all ledgers are analyzed by age. The attached form (1627) is used in my company for analyzing such accounts. The form is made out in triplicate and by salesmen's or agents' territories.

The original is for the executive credit department; the duplicate is for the salesman or agent responsible for the accounts listed on that particular sheet. The triplicate is retained by the local credit manager, so that he can watch the accounts as they are collected and note the efficiency of the various selling representatives.

This form has served a very good purpose and salesmen and agents who are interested in their collections carefully watch their sheet as they receive it monthly and are proud when they receive one without any past due accounts appearing on it.

We always insist that the man who sold the account must collect it. This statement is made for the reason that the selling representative should be more familiar with the customer and his business. He should know how to approach him for collection without offending him.

A good salesman who watches his accounts very rarely needs to have a collection letter directed to any of his customers, but salesmen who neglect to collect their accounts monthly should have collection letters written to their customers.

# Credit Manager May Shape New Policies of Oil Industry

CHICAGO, Sept. 4.—The place of the oil company credit manager in the new order of things in the oil industry was pictured by W. A. Ryan, credit manager, Mid-Continent Petroleum Corp., Tulsa, who addressed the meeting here today of the Petroleum Section of the National Credit Men's Association.

"The credit man can remake the policies of the petroleum industry, if he first puts his own house in order and makes his own department an institution of foresight, personality, accuracy and dependability," said Mr. Ryan.

Here are some of the suggestions he gave his fellow credit men for increasing their service to their companies.

Keep up with reports of crop yields, progress of harvest, movement of live stock and approximate prices of grain in their marketing territories. Such data are a necessary adjunct to other reports and assist in forecasting business.

Have a knowledge of the preponderant crop in various sections of their territory that will let them talk to customers intelligently about lines of business in which they are directly interested.

Keep informed on latest information on crude production, and stocks, and condition of stocks of principal refined products, and changes in prices over the year. This will help to advise them of coming changes in the markets, he said.

Be informed on merchandising methods in the wholesale and retail petroleum markets, so that they can understand salesmen's problems. This will allow them to impress upon salesmen

(*Concluded bottom of Page* 27)

# Phillips Executives to Build Airplanes

*"The Cavalier" new airplane manufactured by the Star Aircraft Co. of Bartlesville, Okla.*

*John H. Kane, vice president and general counsel of the Phillips Pet Co., who has been made president of the newly organized Star Aircraft Co.*

Staff Special

BARTLESVILLE, Sept. 1

OFFICERS of the Phillips Petroleum Co. have organized the Star Aircraft Co. and have begun manufacturing a new airplane, "The Cavalier." One of the first planes manufactured by the new company at its Bartlesville factory will be displayed at the air exposition in Los Angeles Sept. 8 to 16.

The new manufacturing company has no connection with the Phillips Petroleum Co. It is a separate enterprise although a number of officers and directors of the Phillips company are interested in the new venture.

John H. Kane, vice president and general counsel for Phillips, is president of the new company. Frank Phillips, president, and L. E. Phillips, Clyde Alexander and William N. Davis, all vice presidents of the Phillips Petroleum Co., are directors of the aircraft company. Billy Parker, aviation fuel engineer and chief test pilot for Phillips during the past year and a half, is to be vice president and general manager of the new company.

Mr. Parker has been an aviator since 1912 when he learned to fly on a Moisant monoplane. He has been a designer and builder of planes, a flying instructor and exhibition flier for many years. E. A. Riggs, chief engineer for the new company, started in aviation work in 1910. During the war he was commissioned as a technical representative on the staff of Col. R. C. Boling in France and on the staff of Col. E. J. Hall, one of the designers of the Liberty motor. At various times he represented the government at a number of airplane factories in Europe.

"The Cavalier" has been designed especially for private ownership by business men and sportsmen. It is a light, two-seater, high wing, cabin monoplane. Standard equipment includes a Velie M-5, 70 horsepower, 5-cylinder radial type air cooled motor, although other motors may be supplied at the option of the buyer.

The plane has a maximum speed of 105 miles per hour and a cruising speed of 87 miles per hour. It is designed to land and take off quickly from small fields. It will take off in a dead calm within 200 feet and land within 150 feet. Fuel consumption is 6 gallons per hour and oil 1.25 pints per hour. The plane is equipped with two wing fuel tanks of 13 gallons capacity each and an oil capacity of 3 gallons.

The plane cabins are to be fitted up in limousine style with long-wearing upholstery. Pilot and passenger will sit side by side with controls at the left hand seat. The muffled engine, closed cabin and seating arrangement are expected to make student instruction easy.

The fuselage and tail units are of steel tubing. No wood is used anywhere except in wings and cabin finishing. The machine's wing span is 31.5 feet, the overall length is 19 feet 8 inches and the overall height 6 feet 3 inches. Fully equipped with motor the plane weighs 740 pounds and will carry a useful load of 575 pounds.

Organization of the Star Aircraft Co. is another indication of the interest which is being taken by men of the oil industry in aviation.

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(*Concluded from Page* 26)

the need for their being supplemental credit men and also to impress upon them the value to them of spending their effort on developing accounts of high character and good business standing, rather than selecting accounts indiscriminately.

H. R. Wakefield, credit manager, Sun Oil Co., Philadelphia, in discussinng the handling of credit accounts by branch or divisional offices, said when a new account is presented an investigation of the customer is made by the district credit manager through the usual channels. A resume of the facts is made and a copy is sent to the home office, which sets a definite credit limit if the facts are satisfactory. A card index file of each account is kept in the home office, he said.

The Sun company branches go even further than the Indian Refining Co. in summarizing the condition of accounts at the end of each month, Mr. Wakefield continued. The company's form sheets have columns like the Indian's, shown with the paper by J. F. McLaughlin published in this issue, up to accounts unpaid for 90 days, and also columns for 90 days to six months, six months and over, attorney's accounts, and uncollectible accounts.

The home office receives also a day account of the operations of each branch office.

The company has injected a spirit of competition into the collection work. For branches the mark for receivables that shall be current has been set at 80 per cent and the remaining per cent may be spread over the longer periods.

# Development Restrictions Put On Osage Lands Now

TULSA, Sept. 1

TWENTY thousand acres of Osage Indian oil lands, oil leases on which are to be sold by the usual public auction at Pawhuska, Okla., Sept. 27, are to have the same restrictions on their development for oil as other Oklahoma oil lands.

Heretofore Osage lands have been leased under conditions imposed by the Department of the Interior at Washington that practically made necessary their speedy development for maximum oil production except when special dispensation was granted purchasers of the leases by the secretary of the interior.

After the last previous sale, last March, Secretary of the Interior Work, the custodian of all Indian affairs, placed restrictions upon 10 leases sold then which were considered to hold greatest possibility of big production. These restrictions held production to 50 barrels per well per day.

The restrictions were lifted at a meeting of the Osage tribal council Aug. 13. At the same time the tribal council expressed its willingness to have development of its oil lands in the future regulated by the secretary of the interior, if necessary in the interests of conservation, and also to have the same restrictions imposed on their tribal lands as the oil operators impose on themselves where leases are taken from private land owners in the state.

A total of 126 tracts will be offered at the Sept. 27 sale comprising 19,992.15 acres. Seventy-nine of the tracts, 12,472.15 acres lie east of Range 7, and 47 pieces, containing 7,520 acres are on the more important west side.

Tracts likely to bring about the greatest loosening of the purse strings are those being offered in twps. 23-7 and 24-7. It is here that the Kay County Gas Co. discovered that there was oil rather than gas under the leaseholds it held. As these leases were for gas exclusively, both tracts were put on the auction block.

The first one put up, covering the SE of 9-23N-7E brought $236,000 from The Texas Co. The offsetting tracts brought prices ranging from $51,000 to $54,000. Five tracts in Twp. 23-7 are to be disposed of at the coming sale. They are the NW of Sec. 12, the NE of Sec. 14, the SW of Sec. 27, the SE of Sec. 28 and the NE of Sec. 33.

In Twp. 24N-7E, Sec. 9 of which contains the second discovery well of the Kay County Gas Co., there are also five tracts being offered. The NE of Sec. 21, which is a diagonal northwest offset to the discovery lease, will be sold, while the SW of Sec. 23, one mile east of the discovery lease, is also to be offered, as is the two tracts which cover the east half of Sec. 13, and the tract which is the NE of Sec. 25.

The other tracts which seem likely to be the most help to Brother Red Man in keeping the wolf away from his tepee door are located along the southeast and southwest flanks of the Burbank pool. Fancy prices were obtained at the last sale for tracts around the so-called Kewanee extension, near Shidler. Tracts in the southwest of sec. 10 and the northwest of sec. 14 in twp. 26N-6E, will attract no little attention from the bidders with the big bank-rolls.

# Lower Natural Gasoline Rates Recommended for Northeast

Staff Special

WASHINGTON, Sept. 3

MID-CONTINENT natural gasoline producers, who, for years have been fighting for better freight rates from their shipping points to eastern refining and blending points, have achieved their program to the extent of persuading an examiner for the Interstate Commerce Commission to recommend to that body a sizable cut in rates from Group 3 points to destinations in the territory east of the Mississippi and north of the Potomac and Ohio rivers.

In substance, the examiner has advised his employers to bring the natural gasoline rates down to the level of those ordered by it in June, 1927, on the complaints of the Phillips Petroluem Co. and the Chestnut & Smith Corp. The decisions in cases brought by them was a recognition by the rate body that there should be rate concessions to natural gasoline.

This examiner recommendation of a cut in rates was made on complaints brought by the Tidal Refining Co. and others, the Chestnut & Smith Corp., Texas Pacific Coal & Oil Co., Phillips Petroleum Co., the Skelly Oil Co. and the Carter Oil Co. against the Santa Fe railroad.

(Cents per hundred pounds)

| Bartlesville and Points taking same rates to— | Present rate | Proposed rate |
|---|---|---|
| Brunswick, Ga. | 76.5 | 61.5 |
| Latonia, Ky. | 51.5 | 45 |
| Everett, Mass. | 80 | 74 |
| Fall River, Mass. | 80 | 74 |
| Buffalo, N. Y. | 60.5 | 54.5 |
| Cleveland | 56 | 49.5 |
| Toledo, O. | 54 | 47.5 |
| Franklin, Pa. | 60.5 | 54.5 |
| Marcus Hook, Pa. | 76 | 70 |
| Oil City, Pa. | 60.5 | 54.5 |
| Pittsburgh, Pa. | 60.5 | 54.5 |
| Charleston, S. C. | 77 | 62 |
| **Bartlesville and Points included in Docket 14995 adjusted to—** | | |
| Baltimore | 72 | 69 |
| Bayonne, N. J. | 72 | 72 |
| Bayway, N. J. | 72 | 72 |
| Paulsboro, N. J. | 70 | 70 |
| Olean, N. Y. | 61 | 61 |
| Philadelphia | 72 | 70 |
| **Lep. Okla., and Points taking same rates to—** | | |
| Baltimore | 75 | 69 |
| Bayonne | 78 | 72 |
| Bayway | 78 | 72 |
| Paulsboro | 76 | 70 |
| Olean | 67 | 61 |
| Philadelphia | 76 | 70 |

The complaining oil companies attacked as unreasonable the rates prescribed in the Chestnut & Smith and Phillips cases in June, 1927, and the rates that had not been changed as a result of the decisions in those cases. The railroads, on the other hand, wanted the decisions in the Chestnut & Smith and Phillips cases reversed and the whole matter joined with the general petroleum investigation or at least held in abeyance until a decision should be made in that general case.

The examiner, however, said the complainants were entitled to a decision as to the rates they attacked regardless of what might be the outcome of the more comprehensive case.

The report proposed by the examiner does not go as far as the natural gasoline people would like to have the commission go but it goes against practically every rate contention made by the railroads. The latter tried to have the level of rates brought above that prescribed in the Phillips and Chestnut & Smith cases but they failed.

Instead the examiner said that rates to the eastern points should be brought down to the Phillips-Chestnut & Smith level with reductions also to Brunswick, Ga., and Charleston, S. C.

The complaining oil companies tried to have the examiner go into the question whether natural gasoline was entitled to an estimated weight less than 6.6 pounds per gallon, the general estimated weight on refined petroleum products, including both refinery and natural gasoline. But the examiner said the cases were not broad enough; that all the railroads that would be interested in that mat-

ter were not parties to these cases and had not therefore had their day in court on that proposition.

One reason for the railroads trying to hold up these cases is that they expect to get an increase in rates from Texas points into the southeast as a result of the general oil cases. Rates to that part of the country are relatively low on account of low rates from the New Orleans district and a 19-cent rate from north Texas refinery points to Vicksburg, Miss., maintained by a little railroad that makes money out of that rate because it hauls petroleum products practically in train loads.

In the negative part of his recommendations the examiner said the rate body should find not unreasonable the rates from Douglas, Kans., Bartlesville, and other Group 3 points to Bayonne, Bayway and Paulsboro, N. J., and Olean, N. Y. They were adjusted on account of the Phillips and Chestnut & Smith cases last year.

He made a similar recommendation as to rates from Breckenridge, Texas, to all points except to Charleston and Brunswick. He said the rates to those points should be cut to 58.5 cents to Brunswick and 59.5 cents to Charleston. He said the rates from Burkburnett to Bayonne and Bayway should be found not unreasonable; that is, that they are not out of line with the level established in the Phillips and Chestnut & Smith cases.

The points in Oklahoma specifically named in the proposed decision are: Apperson, Burbank, Boynton, Bartlesville, Bryant, Drumwright, Depew, Davenport, De Noya, Fite, Garber, Healdton, Hewitt, Keystone, Lep, Lyman, Maramec, Norfolk, Naphtha, Oilton, Pershing, Stroud, Slick, Seminole, Shidler, Van, Wetumka, Wewoka, Wyona, Wann and Wilcon.

The present and the recommended rates are shown in the subjoined table. Where there is a blank in the column under the caption "proposed rate" the present rate is recommended for continuance. The origin points in Oklahoma are spoken of as points taking the same rates as Bartlesville, and Lep.

The cases, on account of the great interest in them, were assigned to some of the "heaviest" attorneys and traffic managers in the oil industry. H. D. Driscoll, J. R. Freeman, Luther M. Walter, H. E. Ketner and E. A. Starr appeared for the complainants. H. D. Driscoll appeared for the Tide Water; R. W. Ostrander, E. D. Sheffe and Luther M. Walter for Standard Oil Co. of New Jersey; Ed P. Byars for North Texas Petroleum Traffic Bureau, and A. W. Miller, E. M. Hinkle, J. C. Watkins, J. C. Fields and G. W. Moore, for the oil refiners division of the Shreveport Chamber of Commerce. all interveners.

# Lower Rates from West Texas To Indiana Territory

Oil Rates from Group 3, North Texas and West Texas to Kansas City, St. Louis and Chicago and Proposed Rate Reductions from Pecos, Texas.

(Rates in Cents per Hundred Pounds)

| Origin | Kansas City | | Destination St. Louis | | Chicago | |
|---|---|---|---|---|---|---|
| | Light Oils | Fuels | Light Oils | Fuels | Light Oils | Fuels |
| Oklahoma (Group 3) | 25.5 | 20.5 | 30 | 24 | 36 | 29 |
| North Texas | 29.5 | 23.5 | 32.5 | 26 | 38.5 | 31 |
| West Texas | 37 | 29.5 | 40 | 32 | 46 | 37 |
| West Texas differential over Group 3 | 11.5 | 9 | 10 | 8 | 10 | 8 |
| Proposed rates from Pecos | 33.5 | 27 | 35.5 | 28.5 | 41.5 | 33 |
| Differential over Group 3 | 8 | 6.5 | 5.5 | 4.5 | 5.5 | 4 |
| Reduction | 3.5 | 2.5 | 4.5 | 3.5 | 4.5 | 4 |

Staff Special

TULSA, Sept. 4

SUBSTANTIAL reductions in oil rates from Pecos in west Texas to consuming centers in the marketing territory of the Standard Oil Co. of Indiana, have been announced by the Santa Fe railroad. The rates are to be effective Sept. 27.

While the new rates do not affect most of the present refining centers in the new west Texas fields it is understood that other carriers in the district will publish similar rates within a short time. The Texas & Pacific railroad told some of its refiner customers late in July that a rate adjustment would be made and current information is that the new rates from such points as San Angelo, Pyote and Wickett will be published to be effective some time in October.

Freight rates from west Texas refining centers at present are so much higher than those from Oklahoma that the net back on goods moved into the upper Mississippi valley is far below that obtained by Group 3 manufacturers.

On gasoline shipments to Kansas City the present rate is 37 cents per hundred pounds as compared with 25.5 cents from Oklahoma, a differential of 11.5 cents per hundred. This amounts to 0.759 cents a gallon. To St. Louis the refined oil rate from west Texas is 40 cents per hundred as compared with 30 cents from Oklahoma which amounts to 0.66 cent per gallon. The same differential of 10 cents per hundred or 0.66 cent per gallon exists in the light oil rate to Chicago.

Fuel oil rates from west Texas to St. Louis now are 32 cents per hundred as compared with 24 cents from Oklahoma, a differential of 8 cents per hundred or 24.86 cents per barrel. The same differential applies to Chicago on fuel oil and to Kansas City the differential is 9 cents per hundred or 27.97 cents per barrel.

The proposed rates put in by the Santa Fe only from Pecos provide for reductions running from 3.5 to 4.5 cents per hundred on refined oils and from 2.5 to 4 cents per hundred on fuel oils.

On gasoline shipments the new rate to St. Louis from Pecos will be 35.5 cents per hundred and to Chicago 41.5 cents, a reduction of 4.5 cents per hundred in each case. The differentials will be cut to 5.5 cents over Oklahoma and 3 cents over north Texas. The gasoline rate to both St. Louis and Chicago will thus be only 0.1247 cent per gallon as compared with 0.66 cent per gallon at present. Sold on a Group 3 basis west Texas gasoline will net the refiner more than 0.50 cent per gallon more than under the present freight basis.

To Kansas City the new gasoline rate is to be 33.5 cents per hundred pounds which is 8 cents over Group 3 and 4 cents over north Texas.

The reduction in fuel oil rates may have an even greater effect on oil markets of the southwest than the gasoline rates due to the large recovery of fuel oils from the west Texas crudes. The proposed fuel oil rate to Kansas City will be a reduction of 2.5 cents per hundred bringing the differential down to 6.5 cents per hundred or 20.2 cents per barrel.

Differentials on heavy oils to St. Louis and Chicago will be much less than to Kansas City on account of the longer comparative hauls. To St. Louis fuel oil rates will be cut 3.5 cents per hundred to 28.5 cents bringing the differential down to 4.5 cents per hundred or 13.99 cents per barrel. To Chicago the reduction will be 4 cents per hundred cutting the differential exactly in half. The new heavy oil rate to Chicago from Pecos will be 33 cents per hundred which will be only 12.43 cents per barrel higher than the Oklahoma rate to the same destination. Details of current rates to key points with changes in differentials are given in Table No. 1.

The Santa Fe has not published proportional rates through the St. Louis and Chicago gateways to points east of these cities but it is understood that proportionals will be published when other refining points are included in the lower schedules by the Texas and Pacific.

# Ohio Jobbers Are Aroused Over Lower Service Station Price

Staff Special

CLEVELAND, Sept. 1

WHY is the service station price of gasoline in Ohio only 20 cents a gallon when service station prices in all surrounding states are higher?

This question is being asked on all sides by legitimate Ohio jobbers and particularly by those in the eastern part of the state, where freight rates from the southwest are highest.

Many jobbers describe themselves as being with their backs to the wall and preparing to fight for their business lives. Their service station prices are below those of neighboring states and the actual tank wagon prices are 2 and 3 cents a gallon under the posted price.

So critical has the Ohio situation become that charges of unfair trade tactics are being made and the few remaining small Independent jobbers of Youngstown met Thursday, Aug. 30, and discussed the situation.

The Youngstown jobbers, facing actual tank wagon prices 0.25 cents below the present spot tank car market and in one case cited 2.25 cents below the spot tank car market, believe they have as good a case of unfair competition to carry into the courts as the Tennessee Independent jobbers had in January, 1926, when they sued the major distributors of their state, charging discrimination.

The tank wagon price in Tennessee had been slightly under the delivered tank car price of gasoline and the Independents were losing money on every gallon of motor fuel they sold. They filed suit in the chancery court at Columbia, Tenn., and a temporary order was issued prohibiting the major distributors from selling at tank wagon below the tank car delivered price. The case was settled before it came up for hearing on its merits, the major distributors having agreed to maintain a reasonable differential between tank car and tank wagon prices.

The common answer to the inquiry about why service station prices are so low in Ohio, usually is that the Ohio market needs cleaning up. Jobbers generally admit cleaning up was necessary but they charge that the present "sanitation officer" scattered the dirt the last two years by maintaining an uneconomically long margin between tank car and retail prices of gasoline, thereby inviting into the distributing branch of the industry the bulk filling station operators and a horde of other new faces who knew nothing or little of the oil business and only spoiled it for those who did know that a lean time might come.

The service station price of U. S. Motor gasoline in Ohio is 20 cents, including 3 cents state tax. The posted tank wagon price is 19 cents but the actual tank wagon prices are 16 and 17 cents. One Youngstown jobber said he had lost one large commercial account to a major distributor who Aug. 27 billed the buyer at 14 cents tank wagon. This price is 2.25 cents under the present tax paid tank car price of the Standard Oil Co. of Ohio and 5 cents under the Standard's posted tank wagon market.

Only 15 minutes driving beyond the limits of Youngstown, one enters Pennsylvania where the service station price is 23 cents, including a 3-cent tax. In about an hour's good driving one can enter the West Virginia panhandle where the price is 23 cents including 4-cent tax, or a net of 2 cents more than the Ohio price. In about 4 hours New York may be reached, where the price is 20 cents with no tax, or the equivalent of 3 cents more than the Ohio price. In Kentucky the prices are 22, 23 and 24 cents along the Ohio river. The Kentucky prices contain a 5-cent tax.

The price in Detroit is 20.8 cents with 3-cent tax although the freight rate is about the same as the rate to northwestern Ohio and lower than the rates to eastern Ohio points. The price at Evansville, Ind., is the same as the Ohio price with the same amount of tax, but elsewhere in Indiana prices are higher although rates are considerably lower than rates into Ohio.

Local Independent jobbers in Ohio are getting contract gasoline at 14.50 and 15 cents but for their requirements not covered by contracts they are paying around 16.25 cents. They are forced to meet the 16 and 17-cent tank wagon competition. With an average of less than 2 cents gross margin they say no company, large or small, can cover operating expenses.

The Standard Oil Co. in Youngstown gives dealers 3 cents off the service station price and what it calls national accounts 4 cents. National accounts are commercial concerns which may buy throughout the company's marketing territory. The Sun Oil Co. through its agent Hugh H. Hamilton also allows 3 cents off. The Cities Service Oil Co. and the Texas Co. allow dealers 4 cents off the service station price. Local companies such as the Vahey Oil Co. division of Refiners Oil Co., Dayton, O., Duncan Oil Co., Lyden Oil Co., Commonwealth Oil & Gas Co., Rajah Oil & Refining Co., and Brandon Oil Co., distributor for the Pennzoil Co., are reported to be trying to hold to the 3-cent margin but officers of some of these companies say they have been forced to grant the longer margin to keep some of their accounts.

Bulk filling stations, of which there are only three or four in Youngstown, are selling at 18 cents at the pump.

There are few oil company operated service stations in Youngstown. There are many oil company owned stations but these are rented or let rent free to individual operators or agents.

Even the Standard Oil Co. follows the agency plan. Its agents get the stations rent free with the exception of water and electricity. They receive 3 cents a gallon for gasoline and 30 cents for oil. On gasoline dispensed for the company's coupons they receive only 1.1 cents a gallon and 60 cents for the sale of a $10 coupon book at $9 after all coupons have been redeemed.

Rents for service stations where oil company owners get rents, run as high as $150 a month, one such rental having been discovered. Most of the rentals run considerably less although some of the stations are on high priced land. The local Independent jobbers generally handle tires and automobile supplies and have been able to keep going although most say they have been losing on gasoline all summer.

Some Youngstown consumers have been faring better than dealers. Aug. 2, the day the Standard advanced the posted tank wagon price 1 cent to 18 cents and held the service station price stationary at 19 cents, the general agent of the American Railway Express Co., issued this bulletin to employes:

"Supplementing bulletin placed yesterday relative to furnishing employes with Standard Oil Co. books of tickets at $7.40. We have now been furnished with a supply of these books and accordingly they can be purchased immediately at my office whenever desired."

This price for the $10 coupon books

made the gasoline cost the express company employes approximately 14 cents a gallon, or 5 cents off the service station price.

The storekeeper of the Truscon Steel Co. this week was selling the books at $7.90 or 15 cents a gallon when clubs of 10 employes would place orders.

The Youngstown Sheet & Tube Co. was selling a benzol-gasoline blend at 18 cents a gallon to employes. The benzol was produced at the company's own coke ovens and the gasoline was being bought in tank car lots.

At 16.25 cents delivered, tax paid, the bulk service station operator, retailing at 18 cents, has a margin of 1.75 cents which, if he has a large gallonage, can make him a profit, the jobbers admit but say they cannot operate a bulk station and fleet of trucks on a gross margin of 0.75 cent, this margin assuming they are able to get the maximum actual tank wagon price of 17 cents.

The spot price of 16.25 cents for gasoline is low as far east in Ohio as Youngstown, considering present Group 3 prices. The freight rate to Youngstown from the Group is 3.80 cents a gallon, the tax 3 cents, making a net back of only 9.45 cents Group 3. At the weighted average of Group 3 one day this week of 9.70 cents, the delivered price in Youngstown would have been 16.50 cents. But refiners outside the state have been forced to meet the 16.25-cent delivered price which was well in line with the Group in western Ohio where the freight rate is only 3.40 and 3.50 cents a gallon from the Group.

But it is the service station price which is the sore spot.

"The large distributors are not hitting the price cutters any more," one local jobber said. "They are hitting the legitimate jobbers. The situation brings out many puzzling questions, among them, 'Why is the service station price of gasoline 20 cents?' and 'What action should the jobber take?'"

One jobber said the service station price should be 6 cents above the tank car price. This margin would allow the jobber 3 cents gross margin and give the dealer 3 cents which all jobbers agree he should have.

The president of one local company said he was considering abandoning the policy of renting stations to dealers and having his company operate its own stations. He was not sure that this would earn the company a fair profit because an employe would have less incentive to build business than a dealer who increased his earnings when he increased his gallonage.

The Youngstown situation, which is similar to those at other points in Ohio, is generally regarded as the aftermath of the long margins of 1926 and 1927 when, in the scramble for gallonage, refiners from outside the state made Ohio a dumping ground for gasoline.

## Some Ohio Consumers Get Gasoline at Less Than Tank Car Delivered Price

SPOT Oklahoma gasoline laid down tax paid at several Ohio points would have cost last week as follows, the weighted average appearing in Platt's Oilgram being taken as bases:

At Cincinnati: Aug. 31, 16.1659 cents; Aug. 30, 16.1643; Aug. 29, 16.1527; Aug. 28, 16.1021, and Aug. 27, 16.0861.

At Columbus and Toledo: Aug. 31, 16.3257 cents; Aug. 30, 16.3243; Aug. 29, 16.3127; Aug. 28, 16.2621, and Aug. 27, 16.2461.

At Cleveland: Aug. 31, 16.4659 cents; Aug. 30, 16.4643; Aug. 29, 16.4527; Aug. 28, 16.4021, and Aug. 27, 16.3861.

At Youngstown: Aug. 31, 16.5659 cents; Aug. 30, 16.5643; Aug. 29, 16.5527; Aug. 28, 16.5643, and Aug. 27, 16.4861.

The Standard Oil Co. of Ohio was quoting 16.25 cents tax paid over early September.

The service station prices have been 20 cents and the posted tank wagon price 19 cents but actual tank wagon prices have been 16 and 17 cents generally with some sales below the 16 cents. One large Independent refiner has been supplying bulk storage stations by tank wagon below the tank car price.

Coupon books have been generally sold at $9 for $10 books which means 2 cents off the service station price. Commercial accounts have sold books at $8.45 and $8.50 which is about 3 cents off; at $7.90 and $8 which is 4 cents off, and $7.40 and $7.50 which is 5 cents off.

At the last two groups of prices consumers have been getting gasoline for less than the tank car delivered prices.

Many refiners could not see, one observer said this week, that they would eventually hurt their own business by selling cheaper in Ohio than they did in other marketing territories. The cheapness of gasoline brought in excessive competition which often made the business activities of long established companies unprofitable.

The maintenance of high posted prices for gasoline at tank wagon and service station and the declining tank car market brought in many dealers who had no ideas of business practice but who had enough money to put up a building, and install tanks, pumps and other equipment. These dealers cut established prices and skimmed the cream from many retail markets.

This year the going has been harder until now those that remain are selling only 1 or 2 cents under the posted service station markets. Some have passed on, evidently unable to weather the period of narrow margins that have existed about all of this summer.

More practical oil companies have taken over their stations and raised the prices to the posted level. When this was done at one bulk station in a northeastern Ohio city the gallonage fell from 3000 gallons to 300 gallons average a day. At the larger gallonage at 4 cents under the posted price the station had netted $1500 a month. At the higher price profits vanished and the operator said he had been forced to become a philanthropist.

Until the last week or two it has been difficult for some of the bulk station men to get supplies regularly at lower prices but offerings lately have come from refining territories outside Group 3 at prices which have been lower than actual Group 3 spot market prices. These offerings have been confused with Group 3 prices, but so far have been unable to affect the Group 3 market seriously.

But cheaper spot market gasoline would not greatly aid situations such as the one at Youngstown, it is said. There, the local jobbers contend, the case is uneconomical and cannot be defended as economical unless the major distributors can manufacture gasoline 3 cents cheaper than the refiners that have been supplying the local Independent jobbers. That this can be done is doubted by the jobbers, even though the crude is shipped into consuming territory by pipe line and the most improved refining processes are used.

Jobbers can see no advantage for the major company which has to ship the gasoline long distances by rail, the same as the local jobber does. The Youngstown jobbers figure that one large distributor can net back to its refinery in Texas not more than 6.25 cents a gallon, or about 3 cents under the Group 3 spot price.

There is considerable fear that the refiners who have been supplying the local Independent jobbers will refuse to sign contracts for 1929 because they have been getting a netback this summer 1.50 to 2 cents under the spot market. Yet, the jobbers point out, they have been losing money also because actual tank wagon prices have been 2 and 3 cents under the posted price and the service station price is too low in relation to the tank car price.

The Ohio situation, it is said, will be taken up before the convention of the Ohio Petroleum Marketers Association in Toledo, Sept. 5, 6 and 7.

# Review of Late Production News

TOTAL crude production in this country reached above 2,500,000 barrels daily average, for the week ending Sept. 1, for the first time in nearly a year.

Increases in output in the prorated districts of Pecos and Winkler counties, Texas, were responsible for the gain of about 26,000 barrels in total domestic production over the week preceding, which brought the total to 2,503,250 barrels, according to the figures of the American Petroleum Institute.

Crude oil imports were at the rate of 214,285 barrels daily average, a gain of nearly 9000 barrels.

Total crude supply, 2,717,500 barrels daily average, was nearly 35,000 barrels gain over the week before.

In Oklahoma, output in Little River was down about 7000 barrels from the preceding week, Earlsboro about 6000 barrels higher; total Oklahoma gained 4750 barrels.

An increase of 26,450 barrels in Texas was almost entirely in West Texas. Rocky Mountain fields were practically unchanged. While Long Beach, California, gained 2000 barrels, moderate declines in other districts brought the total down to 1400 barrels under last week.

## California

LAST week Rio Grande Oil Co. completed a well in the northeast edge of Long Beach field for better than 5000 barrels of 32 gravity oil at 6178 feet, in addition to about 5,000,000 cubic feet of gas having a natural gasoline content of about 5 gallons to the 1000 feet. This turns attention to this end of the field. Actively drilling wells in this field now total 185, with many of this number drilling below 5000 feet.

The Richfield Oil Co. completed a well at Long Beach Sept. 2 for 6600 barrels of clean oil. The well is producing from an estimated 700 feet of sand. Both these wells will call for additional drilling operations in Long Beach.

The deep sand discovery well at Santa Fe Springs was opened up and flowed at the rate of about 6000 barrels, but was pinched back to about 3500 barrels a day.

Total operations ranging from locations to drilling wells at Santa Fe Springs have reached 166, with new locations being made every day. Operators are rushing as fast as possible to get wells started, but lack of equipment is holding back many.

Plans are now being laid to take surplus gas from the new deep sand and pump it into the Meyer zone, just above, and now partially depleted. This calls for a cooperative organization of operating companies.

The Shell Co. completed a 2200-barrel well in Brea Canyon in the midst of old wells which have been on production for at least 20 years. Plenty of production could be secured in this area, but the companies plan no intensive drilling campaign until the oil is needed.

Leases are being taken at Huntington Beach with a view of drilling for a deeper sand, but most of the companies interested are too busy at Santa Fe Springs to start much else now.

## Oklahoma-Kansas

PRINCIPAL interest in the Mid-Continent today centers on the hearing to be held by the state corporation commission Sept. 6, at which time application of Umpire Collins and the Seminole advisory committee for an order restricting pools other than the Seminole district will be considered.

An attempt during the week by one operating company to "blow up" the restrictive measures in Little River has resulted in preparations by other affected operators to employ court methods to keep the offender in line.

The new development in Little River is yielding chiefly small wells, many of them not flowing their production naturally. There are about 80 yet to be completed in the present campaign and, as most of them which will not flow make good wells when put on gas lift, the addition to daily production of the field is expected to be large.

Outside of the Little River and St. Louis pool developments, only routine wells were completed. The St. Louis pool continues at around 55,000 barrels daily from 10 Wilcox sand wells and pipe line congestion has resulted. It is not serious, but for the time production exceeds facilities.

## Texas, New Mexico, Louisiana

Cisco series geological beds yielded a fresh light oil discovery in southwestern Jones county, between the general Ranger territory and the west Texas Permian basin. The well, which started off making 63 barrels an hour in sandy lime at 2483 feet, is four miles north of Noodle Creek development and a mile and a half northeast of the newer completions in the Tiner's Corner area. It is Snowden & McSweeney's No. 1 Bickley, in Texas & Pacific survey 18, Sec. 50.

Operators in the Winkler county area of the west Texas region have decided not to recommend for the present a proposed increase in the allowable production, under prorating practice. Some operators had suggested raising the daily maximum from 175,000 to 200,000 barrels.

The Humble Oil & Refining Co. has made important completions in two controlled areas of south and east Texas. In the W. C. White league, in Austin county, its No. 3 Gutoskey made 4000 barrels initial at 3267 feet, and another well a mile north, 500 barrels at 3335 feet.

On the Boggy Creek salt dome, on the Anderson-Cherokee county boundary in east Texas a Humble well is making 100 barrels an hour, 27 per cent b.s., after deepening to 3867 feet.

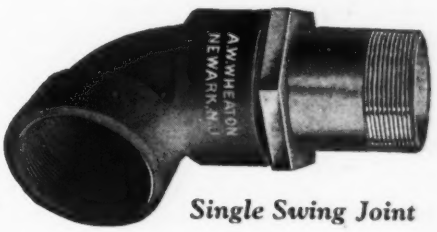
In Gulf Coastal Louisiana, Rycade Oil Corp.'s No. 1 state, on the Bayou Bouillon salt dome, came in for 1500 barrels daily at the 3800-foot level.

## Wyoming, Montana

THE Texas Production Co. has opened what may prove to be a new field at Alkali Butte, 9 miles southeast of Riverton, Wyo., and north of the Big Sand Draw gas field. The hole is supposed to be in the top of the Dakota sand at about 3986 feet. It flowed at the rate of about 600 barrels a day.

What is believed to be the largest well to be completed in the Pondera field in Montana is that of the Texas Pacific Coal & Oil Co., which swabbed 19 barrels an hour on a three-day test.

# And in SWING JOINTS, *too*—




*Single Swing Joint*

## it will pay you to get WHEATON Quality

### *They're* ALL BRONZE—*not only the Easiest Swinging but the* Longest Lasting —*and there's a size for every need*

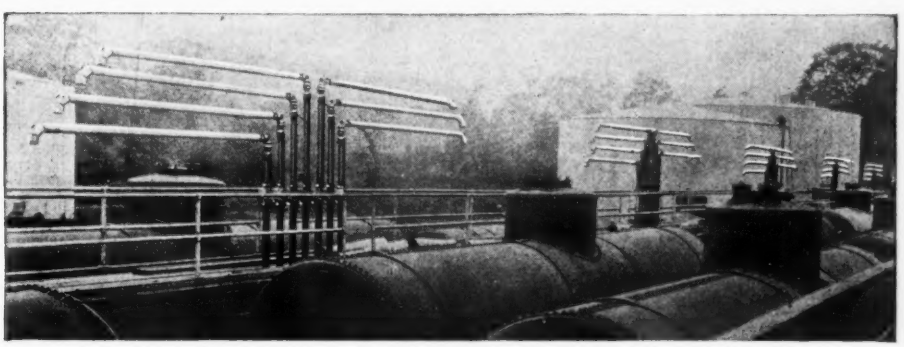
*Installation of Wheaton Double Swing Joints; also, Wheaton Loading Valves and Wheaton Tank Truck Faucets.*

NOT only do Wheaton Swing Joints function with smoothness—not only do they reduce strains and leaks—they *continue* to do so long after ordinary joints have been cast into the junk heap. And this is due to the *material* from which they are made: Wheaton Swing Joints are ALL BRONZE—*tough, long-lasting* bronze, which *neither crystallizes nor corrodes.*

Just as Wheaton Faucets and Valves are famed throughout the industry for their *fine fit and finish,* so are Wheaton Swing Joints universally known as the finest *fitting* and the smoothest *swinging.*

Why not start *now* to *standardize* on Wheaton Swing Joints? You can secure *any size,* according to your need: 1", 1¼", 1½", 2", 2½", 3", 4"—large sizes for pipe lines, small sizes for curb pumps—single or double swing. Send for a sample, today. Give it your own test. If not entirely satisfactory, return it for credit or refund.

***Double Swing Joint***



*This view also shows an installation of Wheaton Double Swing Joints and Wheaton Loading Valves*

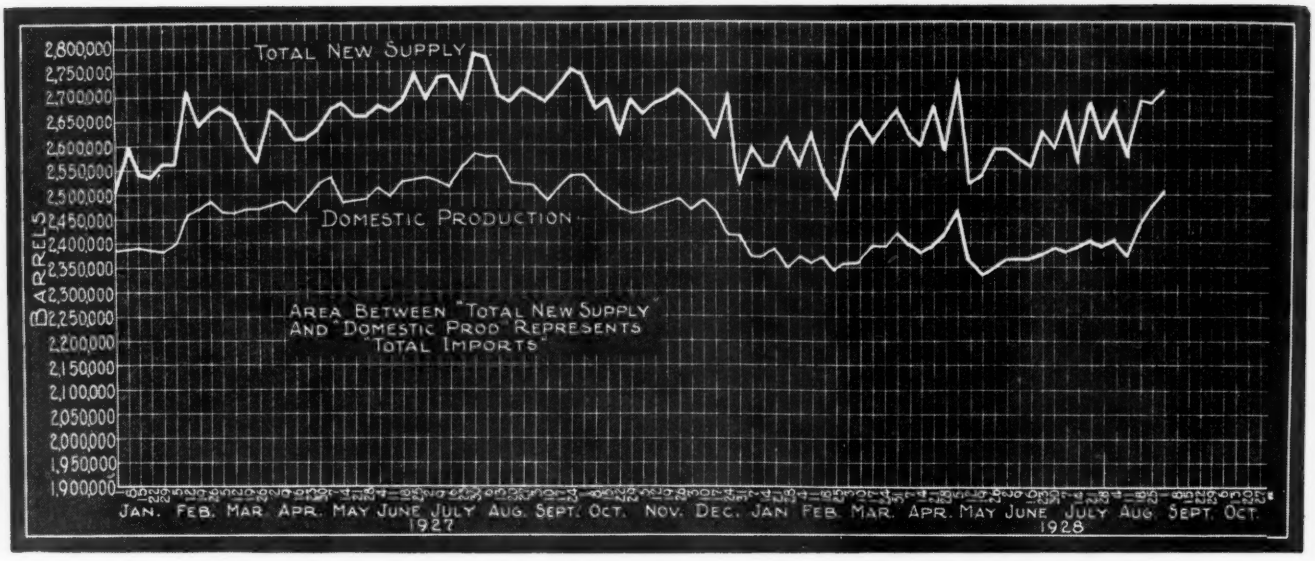
**A. W. WHEATON BRASS WORKS, NEWARK, N. J.**

*Empire Brass Mfg. Co., Ltd., London, Ontario, Canadian Manufacturers and Distributors*

# Wheaton

**FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS**

# Daily Average Crude Oil Production and Imports




**Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute**

## PRODUCTION SUMMARY

| | Sept. 1 | Aug. 25 |
|---|---|---|
| **Production east of Rockies** | 1,874,250 | 1,847,050 |
| **Increase** | | 27,200 |
| **Total production in U. S.** | 2,503,250 | 2,477,450 |
| **Increase** | | 25,800 |
| **Crude oil imports** | 214,285 | 205,428 |
| **Increase** | | 8,857 |
| **Total crude supply** | 2,717,535 | 2,682,878 |
| **Increase** | | 34,657 |

### OKLAHOMA

| | Sept. 1 | Aug. 25 |
|---|---|---|
| North Braman | 2,900 | 2,950 |
| South Braman | 1,500 | 1,450 |
| Blackwell | 3,400 | 3,400 |
| Hubbard | 2,800 | 2,600 |
| Thomas | 1,200 | 1,300 |
| Tonkawa | 12,600 | 12,800 |
| Garber | 8,100 | 8,100 |
| Burbank | 28,550 | 28,750 |
| Osage, outside Burbank | 27,050 | 27,100 |
| Cushing | 19,850 | 19,850 |
| Yale Jennings | 7,400 | 7,450 |
| Davenport | 1,800 | 1,850 |
| Bristow-Slick | 20,900 | 20,950 |
| North Okmulgee | 14,650 | 14,650 |
| Pearson | 3,400 | 3,400 |
| Lyons-Deaner | 5,750 | 5,800 |
| St. Louis | 83,350 | 76,450 |
| Allen Dome | 20,250 | 19,950 |
| Cromwell | 9,200 | 9,250 |
| Papoose | 4,150 | 4,150 |
| Wewoka | 5,750 | 5,750 |
| Seminole | 48,400 | 48,550 |
| Bowlegs | 52,300 | 52,450 |
| Searight | 12,450 | 12,450 |
| Little River | 106,100 | 112,800 |
| Earlsboro | 94,050 | 88,300 |
| Duncan district | 7,800 | 7,650 |
| Graham | 5,300 | 5,200 |
| Fox | 1,650 | 1,650 |
| Healdton | 14,000 | 14,000 |
| Hewitt | 9,450 | 9,750 |
| Scholem Alechem | 15,100 | 15,450 |
| Others | 52,650 | 52,850 |
| Total, Oklahoma | 703,800 | 699,050 |
| Increase | | 4,750 |

### KANSAS

| | | |
|---|---|---|
| Greenwood County | 27,100 | 28,000 |
| Florence-Covert | 1,000 | 1,000 |
| Peabody-Elbing | 3,200 | 3,200 |
| Eldorado-Towanda | 12,750 | 12,750 |
| Augusta-Fox-Bush | 3,350 | 3,350 |
| Rainbow Bend | 1,600 | 1,500 |
| Russell | 3,800 | 3,800 |
| Churchill | 9,050 | 9,400 |
| Oxford | 9,700 | 9,900 |
| Others | 29,300 | 29,300 |
| Total, Kansas | 100,850 | 102,200 |
| Decrease | | 1,350 |

### NORTH LOUISIANA

| | | |
|---|---|---|
| Homer | 4,300 | 4,300 |
| Haynesville | 5,900 | 5,900 |
| Caddo, light | 9,400 | 9,350 |
| Caddo, heavy | 2,950 | 3,100 |
| De Soto, Red River | 3,950 | 3,950 |
| Elm Grove | 550 | 550 |
| Bellevue | 750 | 750 |
| Cotton Valley | 4,450 | 4,400 |
| Urania | 6,900 | 6,900 |
| Pleasant Hill | 550 | 600 |
| Total, North Louisiana | 39,700 | 39,800 |
| Decrease | | 100 |

### ARKANSAS

| | | |
|---|---|---|
| El Dorado | 5,250 | 5,200 |
| Champagnolle | 13,200 | 14,600 |
| Smackover, light | 7,300 | 7,250 |
| Smackover, heavy | 56,450 | 56,700 |
| Stephens | 1,000 | 1,000 |
| Nevada | 1,250 | 1,250 |
| Lisbon | 1,950 | 1,950 |
| Others | 100 | 100 |
| Total, Arkansas | 86,500 | 88,050 |
| Decrease | | 1,550 |

### TEXAS (Outside Gulf Coast)

#### Panhandle District

| | | |
|---|---|---|
| Hutchinson County | 33,750 | 33,600 |
| Carson County | 6,650 | 6,700 |
| Gray County | 21,600 | 20,950 |
| Wheeler County | 750 | 950 |
| Others | 800 | 500 |
| Total, Panhandle District | 63,550 | 62,700 |
| Increase | | 850 |

#### North Texas

| | | |
|---|---|---|
| Burkburnett | 9,950 | 9,800 |
| Electra | 13,150 | 13,250 |
| Iowa Park and K-M-A | 3,900 | 3,800 |
| Wilbarger | 36,350 | 36,600 |
| Archer County | 20,050 | 20,100 |
| Montague-Cooke | 11,050 | 11,100 |
| Others | 650 | 650 |
| Total, North Texas | 95,100 | 95,300 |
| Decrease | | 200 |

#### West Central Texas

| | Sept. 1 | Aug. 25 |
|---|---|---|
| Stephens County | 7,050 | 7,100 |
| Eastland-Desdemona | 7,000 | 6,900 |
| Brown County | 12,000 | 11,700 |
| Coleman County | 3,500 | 3,500 |
| Callahan County | 3,600 | 3,600 |
| Shackleford County | 10,750 | 10,700 |
| Young County | 8,100 | 8,100 |
| Throckmorton County | 950 | 900 |
| Palo Pinto County | 450 | 450 |
| Jack County | 1,700 | 1,750 |
| Others | 650 | 600 |
| Total, West Central Texas | 55,750 | 55,300 |
| Increase | | 450 |

#### West Texas

| | | |
|---|---|---|
| Jones County | 1,950 | 1,950 |
| Mitchell and Scurry Counties | 2,800 | 3,100 |
| Howard County | 10,300 | 7,100 |
| Reagan County | 18,350 | 18,300 |
| Crane and Upton Counties | 60,450 | 60,700 |
| Crockett County | 3,250 | 3,350 |
| Pecos County | 77,450 | 65,000 |
| Winkler County | 185,100 | 173,800 |
| Others | 1,600 | 1,500 |
| Total, West Texas | 361,250 | 334,800 |
| Increase | | 26,450 |

#### East Central Texas

| | | |
|---|---|---|
| Mexia | 6,650 | 6,800 |
| Currie | 450 | 450 |
| Richland | 550 | 550 |
| Wortham | 1,600 | 1,600 |
| Corsicana-Powell | 10,000 | 10,300 |
| Nigger Creek | 950 | 1,000 |
| Others | 2,350 | 2,300 |
| Total, East Central Texas | 22,550 | 23,000 |
| Decrease | | 450 |

#### Southwest Texas

| | | |
|---|---|---|
| Luling | 13,650 | 13,500 |
| Lytton Springs | 1,000 | 1,000 |
| Somerset | 700 | 700 |
| Laredo District | 8,600 | 8,600 |
| Dale | 1,200 | 1,250 |
| Others | 400 | 400 |
| Total, Southwest Texas | 25,550 | 25,450 |
| Increase | | 100 |
| Total, West Texas (Outside Gulf Coast) | 623,750 | 596,550 |
| Increase | | 27,200 |

### GULF COAST

#### Coastal Texas

| | | |
|---|---|---|
| West Columbia | 7,200 | 7,800 |
| Damon Mound | 500 | 700 |
| Big Creek | 3,000 | 2,900 |
| Boling | 1,950 | 2,000 |
| Blue Ridge | 9,550 | 9,300 |
| Pierce Junction | 10,450 | 10,550 |
| Humble | 1,350 | 1,350 |
| Goose Creek | 6,650 | 6,900 |
| South Liberty | 3,650 | 3,950 |
| Hull | 10,550 | 10,500 |
| Saratoga | 1,000 | 1,000 |
| Batson | 1,400 | 1,400 |
| Barber's Hill | 600 | 600 |
| Sour Lake | 3,350 | 3,300 |
| Spindletop | 37,900 | 37,500 |
| Orange County | 3,350 | 3,500 |
| Others | 2,800 | 2,800 |
| Total, Coastal Texas | 105,250 | 106,050 |
| Decrease | | 800 |

#### Coastal Louisiana

| | Sept. 1 | Aug. 25 |
|---|---|---|
| Vinton | 4,350 | 4,350 |
| Sulfur Dome | 3,200 | 3,200 |
| Lockport | 3,800 | 3,800 |
| Sweet Lake | 3,800 | 3,800 |
| Evangeline | 1,100 | 1,100 |
| East Hackberry | 3,700 | 3,650 |
| Edgerly | 1,000 | 1,000 |
| Sorrento Dome | 1,200 | 1,200 |
| Others | 1,200 | 1,200 |
| Total, Coastal Louisiana | 23,350 | 23,300 |
| Increase | | 50 |
| Total, Gulf Coast | 128,600 | 128,350 |
| Decrease | | 750 |

### ROCKY MOUNTAIN

#### Wyoming

| | Sept. 1 | Aug. 25 |
|---|---|---|
| Salt Creek | 38,500 | 38,450 |
| Grass Creek | 2,400 | 2,350 |
| Elk Basin | 950 | 1,050 |
| Big Muddy | 2,600 | 2,600 |
| Lost Soldier | 4,050 | 4,150 |
| Rock Creek | 2,750 | 2,750 |
| Lance Creek | 500 | 400 |
| Others | 5,450 | 5,600 |
| Total, Wyoming | 57,200 | 57,350 |
| Decrease | | 150 |

#### Montana

| | | |
|---|---|---|
| Cat Creek | 1,650 | 1,700 |
| Sunburst | 8,000 | 8,000 |
| Others | 200 | 150 |
| Total, Montana | 9,850 | 9,850 |

#### Colorado

| | | |
|---|---|---|
| Moffat (Craig) | 1,400 | 1,150 |
| Fort Collins | 2,600 | 2,700 |
| Florence | 1,050 | 1,000 |
| Others | 2,350 | 2,900 |
| Total, Colorado | 7,400 | 7,750 |
| Decrease | | 350 |

#### New Mexico

| | | |
|---|---|---|
| Table Mesa | ..... | ..... |
| Hogback | 500 | 400 |
| Artesia | 1,000 | 1,050 |
| Rattlesnake | 1,900 | 1,950 |
| Others | 200 | 200 |
| Total, New Mexico | 3,600 | 3,600 |
| Total, Rocky Mountain | 78,050 | 78,550 |
| Decrease | | 500 |

### CALIFORNIA

| | Sept. 1 | Aug. 25 |
|---|---|---|
| Santa Fe Springs | 38,000 | 38,000 |
| Long Beach | 194,000 | 192,000 |
| Huntington Beach | 53,500 | 53,500 |
| Torrance | 17,500 | 17,700 |
| Dominguez | 11,000 | 11,000 |
| Rosecrans | 6,000 | 6,000 |
| Inglewood | 29,500 | 29,700 |
| Midway-Sunset | 74,000 | 73,500 |
| Ventura Avenue | 48,000 | 50,000 |
| Seal Beach | 28,000 | 30,000 |
| Others | 129,500 | 129,000 |
| Total, California | 629,000 | 630,400 |
| Decrease | | 1,400 |

# Big Gain in Production Foreseen Unless Widespread Restriction is Practiced

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Sept. 1

IN A week filled with attempts to break the restrictive agreement in Seminole, completions have for the most part been routine. The drilling of more failures at the west side of the south Little River pool serves to show the edge in that direction; however, there is enough ahead to keep raising the production unless the cooperative curb is applied.

Preparatory to the corporation commission hearing on Sept. 6, in Tulsa, at which an order will be sought regulating production in all the flush fields of the state, Umpire Collins is preparing estimates as to the future. He shows that as of the present date, there are 310 wells drilling in the Greater Seminole area, which includes the St. Louis pool in Twp. 7N-5E, Pottawatomie county. There are 70 wells drilling in that township.

In the South Little River pool there are 77 wells, 85 drilling and 20 probable locations. Dry and abandoned wells number 17. Present production is 112,000 barrels and the umpire estimates that 25,000 barrels are shut in. His estimate on the peak for this field is 175,000 barrels, natural and 210,000 barrels if wells are shot.

In the application drawn by the operators and presented to the commission by Umpire Collins, it is recited that with unrestricted drilling and no proration plan in force, Oklahoma's production by November or December would amount to about 900,000 barrels daily, or 300,000 barrels in excess of the anticipated market demand at that time. The proposed plan, in detail, has been previously discussed.*

Several operators got their bumps in Little River and St. Louis during the week. Magnolia Petroleum Co.'s No. 2 Harjo, NW NE NE of 14-7-6, Little River, topped Wilcox at 4,127 feet and was drilled to 4,134. It got 3,000 feet of water. It was plugged back to 4,128 feet and made 350 barrels of oil and considerable water on air lift in the next 24 hours. It is one location west of a good well and was "running high," hence its poor performance was surprising.

Further filling out a row of dry holes along the west side of the south Little River pool, Sinclair Oil & Gas Co. drilled Nos. 1 and 2 Williams into the Wilcox, getting holes full of water. No. 1 Williams, in the NE SW of 15-7-6, ran away low, getting the Wilcox at 4,949 feet and ending its career at 4,976 feet. It is a half mile west of production. The other failure, No. 2 L. Williams, is in the NE SE SE of 15-7-6, but is an offset to Reiter-Foster Oil Corp.'s No. 3 Bunyard, which is making around 600 barrels. The Sinclair well got the Wilcox at 4,665 feet.

Two locations east of this last mentioned Sinclair failure, Blackwell Oil & Gas Co. drilled in its No. 1 Talley, NE SW SW of 14-7-6, for production of 990 barrels on the swab. It had the Wilcox at 4,433 feet.

Offsetting the big well T. B. Slick drilled in Sec. 15 as one of the 10 test wells of the field several weeks ago, the Prairie Oil & Gas Co. got an indifferent producer in its No. 1 Gibson, NW SW NW of 14-7-6. It got the Wilcox at 4,422 feet, went to total depth of 4,425 feet, was plugged back to 4,424 feet and produced, by swabbing, 420 barrels, 50 per cent water.

The same company had a little better luck in its No. 1 Talley, SE SW of Sec. 14, getting the Wilcox at 4,194 feet and going to 4,208 feet. It made 1,275 barrels in 24 hours, on air lift.

One of the best wells was that of the Mid-Continent Petroleum Corp., being No. 2 Bruner, NW SE SE of 11-7-6. It got the Wilcox at 4,343 feet, was drilled into the pay 10 feet and flowed 2,830 barrels in 24 hours.

The St. Louis pool, restrictive measures on which will receive attention at the corporation commission's hearing, Sept. 6, Wilcox sand production in this, as yet, small area, totaled 55,013 barrels from 10 wells for the 24-hour period ended Sept. 1. It classified as follows:

**Independent Oil & Gas Co.**

| | |
|---|---|
| No. 1 Youts NW NE SE 19-7-5 | 11,760 |
| No. 2 Youts SW NE SE 19-7-5 | 1,430 |
| No. 3 Youts NE NE SE 19-7-5 | 4,260 |
| No. 5 Youts SW SE SE 19-7-5 | 4,948 |
| Total | 22,398 |

**T. B. Slick, Inc.**

| | |
|---|---|
| No. 1 Hembree NE NW SE 19-7-5 | 5,570 |
| No. 2 Hembree SE NW SE 19-7-5 | 6,455 |
| No. 3 Hembree NE SW SE 19-7-5 | 7,875 |
| No. 4 Hembree SE SW SE 19-7-5 | 8,466 |
| Total | 28,366 |

**Magnolia Petroleum Co.**

| | |
|---|---|
| No. 1 Hembree NW NW SE 19-7-5 1,220 (6 hrs.) | |
| No.1 Fyke NW SW SE 20-7-5 | 3,029 |
| Total | 4,249 |

Magnolia's Hembree well was the Wilcox discovery of this pool. It has been making water—as high as 6 per cent—and during the week ceased to produce. It was put on air lift and made 1,220 barrels in six hours.

The performance of Independent's No. 5 Youts, listed in the tabulation of production, was doubled when the company deepened it 10 feet to total depth of 4,338 feet. (Top of the sand was 4,310 feet.) Production was stepped up by the deepening from 120 barrels per hour to 250 per hour.

Opinion is divided as to the economic importance of this field. Dry holes have limited it to the north and in the respect of water wells being drilled offsetting big production, it behaves like the original Earlsboro development. It is difficult to discount the possibilities of a pool where as high as 70 feet of pay sand is drilled, as has been the case here.

Offsetting the southernmost well of T. B. Slick to the south* Phillips Petroleum Co. failed to get the result that Slick did. This company's No. 2 Stahl, NE NW NE of 30-7-5, topped Wilcox at 4,110 feet and at 4,143 feet the hole was full of oil but it wouldn't flow. Deeper drilling was counted on to improve it.

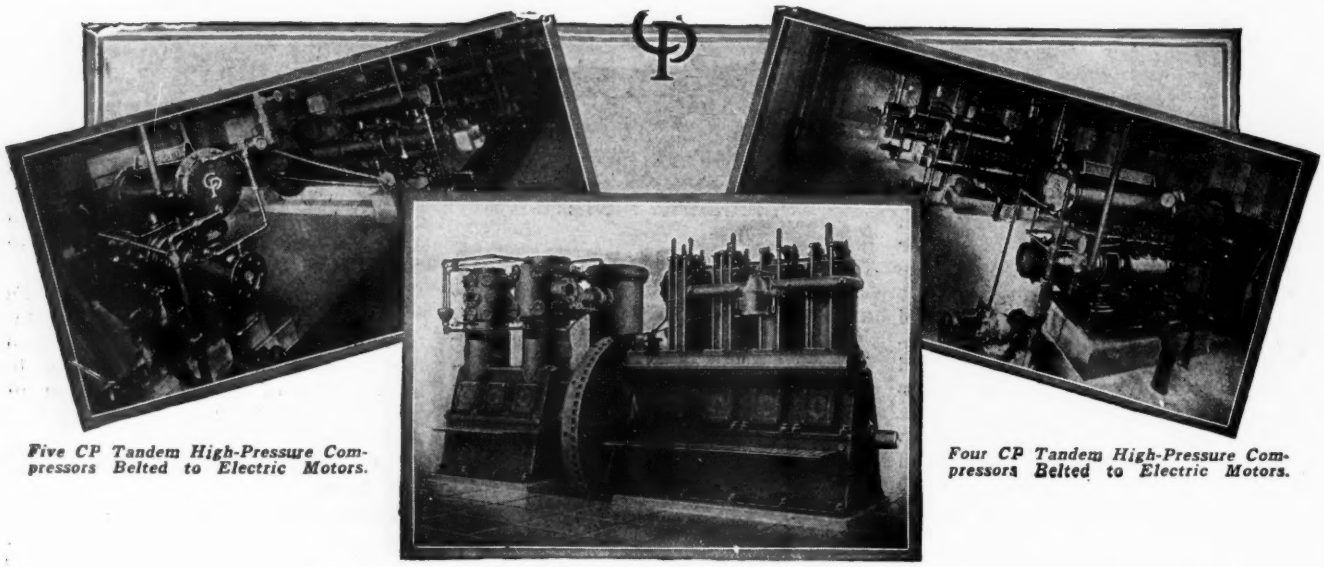
Further definition of the field to the north and east was established by Magnolia's No. 4 Shipshewano—which lease has been a failure in all four wells drilled. This one, in the SE NE of 19-7-5, topped Wilcox at 4,200 feet, a hole full of water being the result.

Southwest of the Allen field, Homaokla Oil Co.'s outside test has the appearance of a fair well which will occasion further drilling. No. 1 Ritchie, in the NE SW SE of 1-4-7E, Pontotoc county, swabbed 185 barrels of oil in 24 hours from sand at 1,985-88 feet. In the Allen pool itself, Sunray Oil Corp. registered the best completion in recent weeks in its No. 4 Nichey, SE NW SE of 18-5-8E. Top of sand was found at 2,485 feet and at 2,555 feet it developed 20 million feet of gas. First oil was found at 2,568 feet and at 2,609 feet it was flowing 120 barrels per hour. Oil is 30 degrees A.P.I.

Kansas continues to be quiet, as does the Texas Panhandle. In Sedgwick county, just north of Wichita, the recent discovery of the Bu-Vi-Bar-Gypsy-Marland continues to click along at 1,600 barrels daily.

*NATIONAL PETROLEUM NEWS, page 19, Aug. 29.

*Map, NATIONAL PETROLEUM NEWS, page 39, Aug. 15 issue.



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# Salt Basin Land Leased in New Mexico Exceeds 2,000,000 Acres

By Paul Wagner
N. P. N. STAFF WRITER

Article 4

WITHIN the boundaries of the Permian age salt basin in southeastern New Mexico more than 2,000,000 acres of leaseholds, or permits, have been taken up by the operating oil companies most active in West Texas.

Total leaseholds in this part of New Mexico probably cover approximately 20 per cent of the combined holdings in West Texas of the various interested companies.

Detailed figures are not available, but three companies control in excess of a million acres in Lea and Eddy counties, New Mexico, and 17 principal operators held 6,665,770 acres in West Texas last January.[1] Scattered holdings of many smaller companies, or larger single blocks belonging to wildcatters, will easily bring totals above 10,000,000 acres in West Texas and 2,000,000 acres in southeastern New Mexico.

Leasing plays, and subsequent wildcatting, represent work in a single geological province in this region, disregarding state boundaries. Geographical lines do change conditions, but such variances turn entirely on leasehold rights and procedure. Geologically, there is no division of territory to be recognized.

Two types of land classifications,[2] federal, state and patented, affect leasehold conditions in New Mexico. They make it necessary for companies entering the state to proceed differently than in most areas, except in acquiring leaseholds on patented lands.

Little patented land is found in Lea county, where present exploratory work is mainly pitched because of the sub-surface lime ridge trending northwesterly in the Permian basin out of the Winkler county, Texas, producing territory.

Most of the more than 2,800,000 acres in Lea county consists either of federal land, under jurisdiction of the Secretary of the Interior, or state land, obtainable through the Commissioner at Santa Fe, N. M.

Trading for patented land usually takes the Mid-Continent "88" form of commercial lease, but the contract may, as elsewhere, set up conditions calling for immediate development work. Development and producing rights governing state lands are similar to those provided for in commercial leases, with some variations, but generally this type of acreage is acquired at auctions held by the Commissioner.

*Winkler county, Texas, development areas are generally reached through Pyote, on the Texas & Pacific railroad, as a port of entry. The picture shows the main street. Mile away in any direction and one is in the Land of Screaming Silences*

Federal lands are acquired under permits issued by the Secretary of the Interior, in whom rests broad discretionary powers. Thousands of such permits have been issued in Lea and Eddy counties, but are not now available adjacent to discoveries or in areas calculated, for other reasons, to have enhanced exploratory values.

The Interior Department is under no obligation to issue permits on vacant federal lands and may, therefore, hold up disposal of such acreage indefinitely, or auction it should the Secretary see fit.

Permits already in effect were issued under the law which allows a citizen of the United States, or a corporation composed of eight or more citizens, to file on 640 acres or 2560 acres, respectively, under pre-

[1]—NATIONAL PETROLEUM NEWS, page 50, Aug. 29, 1928.
[2]—NATIONAL PETROLEUM NEWS, page 24, July 4, 1928.

*The practice of taking toll from vehicular traffic entering the Yates oil field via the highway south of Rankin, west Texas, has been abandoned; but the bridge shown in the picture is still used regularly by visitors crossing the slimy Pecos river into the Yates development area. It was built by Ira G. Yates, now of San Angelo, on whose ranch half of the Pecos county producing wells have been drilled*

scribed conditions of exploration.

Upon making a discovery the citizen or group becomes entitled to receive a lease from the federal government at a specified royalty of five per cent of the sales price of oil and/or gas production from one-fourth of the acreage constituting the permit. He, or they, also gain preferential right to lease the balance of the permit at a higher royalty, graduated upward from 12½ per cent, as fixed by the Secretary of the Interior.

Ownership is limited to one permit on a structure and three permits in the state, such inhibitions applying directly to permit holders.

Oil companies anxious to extend their control over prospective oil lands under federal jurisdiction have frequently entered into operating contracts with permit holders, on the assumption that the inhibitions mentioned will not be made to apply to such agreements.

That method explains how some of the companies operating in southeastern New Mexico hold thousands of acres of federal lands they would be otherwise stopped from controlling.

In addition to any cash consideration in the operating agreement, it is usual for the oil company to contract with the permittee for payment of a royalty on primary leaseholds amounting to the difference between the federal government's five per cent and the 12½ per cent (one-eighth royalty) customarily applying in commercial leases. On secondary leases gained through preferential rights by discovery, excess royalties may or may not be provided for in operating contracts.

Royalty buyers in the New Mexico area, except in the case of mineral rights under patented lands, are confined in their purchases to fractions of the permittee's reserved interest, such as mentioned in the preceding paragraph.

In all other respects, trading and development conditions affecting federal lands elsewhere in the United States are applied in southeastern New Mexico.

State lands on which the federal government relinquished title consist of Secs. 2, 16, 32 and 36, in all the 3400 townships in New Mexico, except where situated inside earlier private grants or within the boundaries of federal reserves.

Where such appropriations or reservations had been made, the state was permitted to select lieu, or indemnity, lands; also numerous other quantity land grants for the benefit of state institutions were made.

*It is visiting time, as the picture shows, at the fork of the roads south of the Roberts-Settles field in the Howard-Glasscock counties, Texas. From left to right are shown: Bruce Engle, National Supply Co., McCamey; Charles White, Vacuum Oil Co., scout, Midland; Frost C. Kendall, Hinderliter Tool Co., Odessa; and Walter Scholz, Delmar Oil Co. scout, San Angelo*

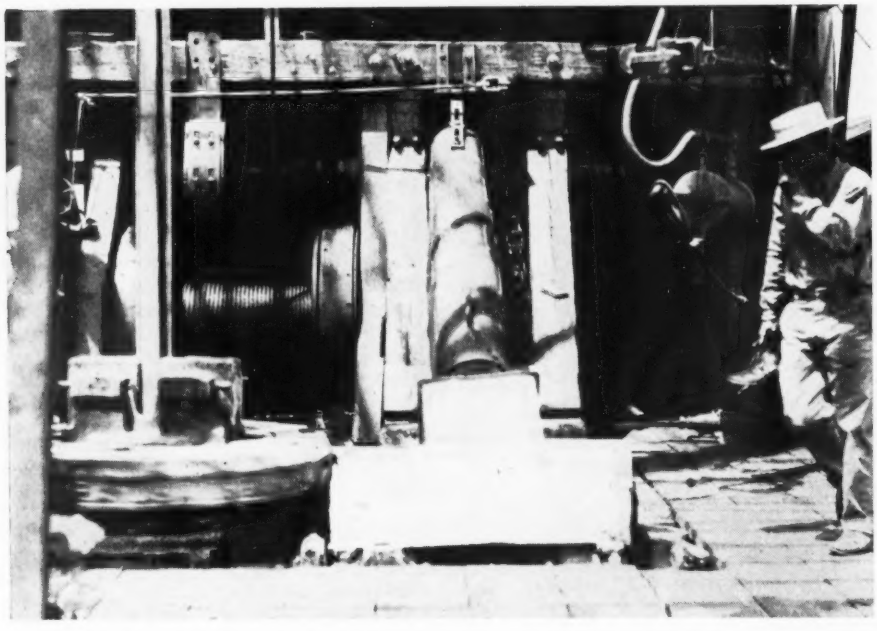
Although not suspected at that time of having prospective mineral values, hundreds of thousands of acres of indemnity and quantity lands were picked in Lea, Eddy and Chaves counties, southeastern New Mexico.

First active leasing of state lands began in 1919 and was gradually extended after the opening of the Artesia field in 1922. Artesia was the first field drilled on state land. Its discovery stimulated leasing in the immediate area, but the fact it never made more than 3000 barrels daily production (and that was not until 1925) failed to carry the acquisition of wildcat acreage very far afield. The next flurry of excitement was in the Maljamar area, township 17 south, range 32 east, about 30 miles north of east of Artesia. Development there fell short of commercial proportions, however, and it remained for the Winkler county, Texas, activity to attract attention because of the indicated possibility of flush production in southeastern Lea county.

It became necessary for some policy of leasing state lands to be worked out after the possibility of oil production in commercial quantity had been indicated. The present administration adopted a form of lease, prescribing among other things a fixed rental to be paid yearly without regard to whether or not development is carried on. The lease grants a tenure of five years, or so long thereafter as oil or gas, or either, is produced in paying quantity.

Provision is also made for a preference right to a new lease on a given tract in case substantial expenditures have been made without discovery in the first five-year lease term. Royalty reservations are for the usual one-eighth, but free use of oil and gas for development purposes is authorized.

Rentals may vary in different parts of the state, but a minimum of 50 cents an acre applies in all of Lea



*It doesn't show in the picture, of course, but this rig on the Humble Oil & Refining Co.'s Walton lease, east side of the Winkler county, Texas, development is entirely painted blue to keep it clean. A safety engineer who visited the rig remarked it was the first he had seen where a trash can is kept for waste and scrap*

Even in boom fields, oil well cementing is too important a matter to entrust to the fly-by-night whose chief claim to business is a cut price. Any business man knows that in a proposition involving service, a cut price is the first sign of cut quality.

In the field of oil well cementing, there is but one company that maintains service year in and year out in all established fields; one company that takes advantage of an exclusive and patent-protected process; one company that is able to point to a record of 40,000 successfully cemented wells. That company is

HALLIBURTON OIL WELL CEMENTING CO.
*DUNCAN, OKLAHOMA*

and parts of Eddy and Chaves counties. Elsewhere, in the inactive areas, rentals range from 25 cents to 5 cents an acre.

Special rules now apply to the acquiring of state lands in such active areas as all of Lea county and parts of Eddy and Chaves counties. There, leases may be made only upon sealed bids or at public auction, the lease in all cases to be awarded to the highest bidder.

Lists of lands available are made public from time to time, the Commissioner also announcing the date and place where sealed bids will be received. Any tracts not bid upon in the manner mentioned will then be offered at public outcry. The commissioner reserves the right, however, to reject any or all bids, whether sealed or otherwise.

In the inactive areas of the state it is provided that no single lease may embrace more than 10,000 acres or cover lands that will not fall within an area 50 miles square. Application must be accompanied by a check for $5 if the lease asked is for 5000 acres, or less; $10, if more than 5000 acres. The minimum first year rental or bonus that can be accepted is $100, in addition to the application fee.

# 5000-Barrel Long Beach Well Causes Drilling

LOS ANGELES, Sept. 1

ATTENTION was turned back to the Long Beach field this week, as Santa Fe Springs settled into its stride to get as many new wells started for the deep sand as possible in the shortest possible time.

Rio Grande Oil & Refining Co. set a new record at Long Beach, when its B-10 on City of Long Beach municipal property came in for around 5500 barrels of 32 gravity clean oil with bottom of hole at 6178 feet. The well settled to 4800 barrels of oil in addition to nearly 5,000,000 cubic feet of gas which has a natural gasoline content of close to 5 gallons to the 1000 feet. This well is located in the far northeast corner of the field and will call for the drilling of several additional wells on the Rio Grande tract as well as other land offsetting.

Rio Grande officials and others were surprised at the size of the well, as seven old wells are now producing on the tract and one well recently completed near the new producer only made 1000 barrels flush at 7093 feet deep, and gas settled at a smaller production.

In the new well 5478 feet of 8⅝-inch was cemented with an oil string of 5¾-inch including 675 feet of slotted pipe landed on bottom. The casing pressure was 800 pounds and tubing pressure 160 pounds.

During the past week five new wells were placed on production at Long Beach, making a total of close to 8000 barrels flush. Early this week total of 185 wells were drilling in the field, a very large per cent drilling below 5000 feet. During the week two new locations were announced.

Reports from Santa Fe Springs on Tuesday were to the effect that Wilshire Oil Co.'s discovery well was opened up for 24 hours and that it flowed at the rate of 6000 barrels a day of 36 gravity oil, and was then pinched back to a flow of about 3500 barrels a day with a heavy pressure on the casing. Wilshire officials refuse any real information to the public but have acknowledged that the report as stated is approximately correct.

Within another ten days at least, one of the four wells in the field now drilling below 5000 feet is expected to pick up the Buckbee oil sand. Then the first real information as to its depth and later on the probable thickness of the new sand will be known. The first wells to go deep are to core from 5500 feet on down to secure the information that all companies are anxious for.

There is some anxiety over the conservation program at Ventura Avenue as Petroleum Securities Co. has dropped from the ranks of companies practicing conservation methods. All the interested companies have been pinching the wells every 30 days so they will produce only 80 per cent of what they ordinarily would flow, to save the gas that would and is going to waste.

Petroleum Securities (owned and controlled by E. L. Doheny and his family) will no longer pinch its wells. Shell Co. has leases offsetting Petroleum Securities lease on three sides and it is generally reported that the other interested companies plan to continue their conservation measures regardless of the action of Petroleum Securities.

It is possible that Shell Co. will permit its offset wells to flow open, but will pinch its wells which is located some distance from the Petroleum Securities lease to make up the difference in oil and gas to be held back. Shell Co., Associated Oil Co. and General Petroleum are observing cooperative conservation plans without reference to what Petroleum Securities is doing or will do.

Chanslor-Canfield-Midway Oil Co. recently completed another well in the deep sand in the old Midway field for about 1800 barrels of oil and Republic Production is also about to complete another deep sand well in the same territory. The first named company (Santa Fe railway interests) holds the bulk of good looking acreage in this area, but no big drilling campaign is expected, and Republic is not expected to keep more than two strings of tools going on its lease.

Shell Co. completed an unusually good well this week in Brea Canyon in Orange County when its Orange 17 came in for about 2200 barrels. This well is located in old territory, near some wells which have been on production for more than 20 years.

## Seminole District Production by Companies and Leases, August 29 and August 22, 1928

EARLSBORO

| Company | Farm | Location | Aug. 29 Wells | Aug. 29 Prod. | Aug. 22 Wells | Aug. 22 Prod. |
|---|---|---|---|---|---|---|
| Amerada | Anderson | 15–9–5 | 2 | 713 | 2 | 769 |
| Amerada | Cowden | 4–9–5 | 7 | 1,401 | 7 | 1,468 |
| Amerada | Rogers | 3–9–5 | 2 | 332 | 2 | 306 |
| Total Amerada | | | 11 | 2,446 | 11 | 2,543 |
| Atlantic et al | Foreman | 18–9–5 | 1 | 150 | 1 | 149 |
| Barnsdall | Brown | 10–9–5 | 4 | 2,078 | 4 | 2,477 |
| Barnsdall | F. Bruner | 2–9–5 | 3 | 698 | 3 | 763 |
| Barnsdall | N. Bruner | 10–9–5 | 3 | 1,228 | 3 | 1,252 |
| Barnsdall | Cudjo | 14–9–5 | 1 | 24 | 1 | 25 |
| Barnsdall | D. Davis | 11–9–5 | 3 | 284 | 3 | 199 |
| Barnsdall | J. Davis | 11–9–5 | 4 | 1,172 | 4 | 1,169 |
| Barnsdall | M. Davis | 11–9–5 | 3 | 59 | 3 | 59 |
| Barnsdall | Gibson | 9–9–5 | 8 | 2,251 | 8 | 2,415 |
| Barnsdall | Hern | 15–9–5 | 1 | 2 | 1 | 1 |
| Barnsdall | Ingram | 1–9–5 | 8 | 1,250 | 8 | 1,156 |
| Barnsdall | Pack | 10–9–5 | 4 | 183 | 4 | 152 |
| Barnsdall | Peter | 10–9–5 | 4 | 37 | 4 | 109 |
| Barnsdall | Sango | 1–9–5 | 4 | 3,240 | 4 | 4,076 |
| Barnsdall | Sebolka | 15–9–5 | 1 | 361 | 1 | 351 |
| Barnsdall | H. Sullivan | 11–9–5 | 1 | 0 | 1 | 11 |
| Barnsdall | Sull-Harjo | 10–9–5 | 2 | 38 | 2 | 43 |
| Barnsdall | Watsutke | 12–9–5 | 4 | 1,179 | 4 | 1,373 |
| Total Barnsdall | | | 58 | 14,234 | 58 | 15,631 |
| Burk-Greis | Wisner | 6–9–6 | 1 | 2,300 | 1 | 2,340 |
| Carter | Davis | 13–9–5 | 2 | 200 | 2 | 225 |
| Carter | James | 6–9–6 | 2 | 7,316 | 2 | 5,745 |
| Carter | Sango | 1–9–5 | 4 | 60 | 4 | 390 |
| Total Carter | | | 8 | 7,500 | 8 | 6,360 |
| Continental | Kays | 2–9–5 | 2 | 35 | 2 | 72 |
| Continental | Spencer | 12–9–5 | 4 | 990 | 4 | 900 |
| Total Continental | | | 6 | 1,025 | 6 | 972 |
| Empire | Barker | 12–9–5 | 1 | 65 | 1 | 57 |
| Empire | Edmundson | 3–9–5 | 3 | 158 | 3 | 158 |
| Total Empire | | | 4 | 243 | 4 | 215 |

(Continued on Page 43)

# Seminole District Production by Companies and Leases, August 29 and August 22, 1928

(*Continued from Page 42*)

| Company | Farm | Location | Aug. 29 Wells | Aug. 29 Prod. | Aug. 22 Wells | Aug. 22 Prod. |
|---|---|---|---|---|---|---|
| Gypsy | Bruner | 10- 9-5 | 4 | 3,150 | 4 | 3,455 |
| Gypsy | B. Carter | 11- 9-5 | 9 | 3,540 | 9 | 2,300 |
| Gypsy | Earl | 16- 9-5 | 1 | 18 | 1 | 17 |
| Gypsy | Hunick | 5- 9-5 | 1 | 2,132 | 1 | 2,300 |
| Gypsy | Noble | 12- 9-5 | 4 | 1,322 | 4 | 2,162 |
| Gypsy | Peter | 10- 9-5 | 3 | 312 | 3 | 305 |
| Gypsy | Sango | 1- 9-5 | 10 | 12,140 | 11 | 10,272 |
| Gypsy | State | 16- 9-5 | 4 | 785 | 4 | 972 |
| Total Gypsy | | | 36 | 23,399 | 37 | 23,703 |
| Independent | Bruner | 10- 9-5 | 3 | 390 | 3 | 317 |
| Indep. | Sullivan | 10- 9-5 | 2 | 22 | 2 | 30 |
| Indep. | Knapp | 8- 9-5 | 3 | 1,879 | 3 | 1,867 |
| Indep.-Margay | Gaines | 11- 9-5 | 4 | 675 | 4 | 675 |
| Total Indep. | | | 12 | 2,966 | 12 | 2,889 |
| Magnolia | Bryant | 9- 9-5 | 6 | 536 | 6 | 551 |
| Magnolia | Cowden | 4- 9-5 | 4 | 40 | 4 | 40 |
| Magnolia | Dixon | 12- 9-5 | 1 | 28 | 1 | 48 |
| Magnolia | Edmundson | 3- 9-5 | 3 | 20 | 3 | 30 |
| Magnolia | Holmsley | 11- 9-5 | 7 | 1,268 | 7 | 1,210 |
| Magnolia | Hyde | 13- 9-5 | 1 | 1,584 | 1 | 1,624 |
| Magnolia | Ingram | 10- 9-5 | 1 | 30 | 1 | 25 |
| Magnolia | Lena | 10- 9-5 | 3 | 60 | 3 | 50 |
| Magnolia | Seay | 12- 9-5 | 9 | 2,810 | 9 | 3,012 |
| Magnolia | Simpson | 10- 9-5 | 3 | 378 | 3 | 80 |
| Magnolia | Sparks | 11- 9-5 | 7 | 839 | 7 | 784 |
| Magnolia | Sullivan | 12- 9-5 | 3 | 80 | 3 | 80 |
| Total Magnolia | | | 48 | 7,673 | 48 | 7,524 |
| Mid-Continent | McCumber | 9- 9-5 | 7 | 90 | 7 | 90 |
| Mid-Kansas | Anderson | 14- 9-5 | 3 | 80 | 3 | 80 |
| Phillips | Dunnaway | 14- 9-5 | 1 | 25 | 1 | 25 |
| Prairie | Baker | 24- 9-5 | 1 | 50 | 1 | 50 |
| Prairie | Davis | 13- 9-5 | 5 | 3,025 | 5 | 3,155 |
| Prairie | C. Graham | 3- 9-5 | 2 | 15 | 2 | 25 |
| Prairie | O. Graham | 10- 9-5 | 4 | 1,120 | 4 | 1,230 |
| Prairie | Stidham | 11- 9-5 | 13 | 2,615 | 13 | 2,850 |
| Total Prairie | | | 25 | 6,825 | 25 | 7,310 |
| Roxana | Bayliss | 17- 9-5 | 1 | 0 | 1 | 14 |
| Roxana | Hearn | 13- 9-5 | 1 | 0 | 1 | 153 |
| Roxana | Spencer | 12- 9-5 | 2 | 1,374 | 2 | 1,325 |
| Total Roxana | | | 4 | 1,374 | 4 | 1,492 |
| Shaffer | Clark | 1- 9-5 | 3 | 452 | 3 | 525 |
| Sinclair | Foreman | 18- 9-5 | 1 | 15 | 1 | 15 |
| Sinclair | Hollins | 12- 9-5 | 1 | 50 | 1 | 50 |
| Sinclair | Sango | 2- 9-5 | 4 | 3,345 | 4 | 3,500 |
| Total Sinclair | | | 6 | 3,410 | 6 | 3,565 |
| Skelly | Sherry | 6- 9-5 | 2 | 4,970 | 2 | 3,086 |
| Skelly | Spencer | 12- 9-5 | 1 | 369 | 1 | 367 |
| Total Skelly | | | 3 | 5,339 | 3 | 3,453 |
| Superior | Ingram | 1- 9-5 | 2 | 907 | 2 | 827 |
| Superior | Walker | 2- 9-5 | 2 | 3,388 | 2 | 3,240 |
| Total Superior | | | 4 | 4,295 | 4 | 4,067 |
| Texas | Anderson | 2- 9-5 | 8 | 545 | 8 | 515 |
| Texas | Brown | 10- 9-5 | 8 | 220 | 8 | 300 |
| Texas | Rogers | 5- 9-5 | 4 | 2,580 | 4 | 2,505 |
| Texas | Wilmott | 10- 9-5 | 7 | 562 | 7 | 585 |
| Total Texas | | | 27 | 3,907 | | |
| Tidal | Walker | 35-10-5 | 1 | 2,140 | 1 | 55 |
| Tidal | Watkins | 9- 9-5 | 7 | 2,895 | 7 | 3,000 |
| Total Tidal | | | 8 | 5,035 | 8 | 3,055 |
| Twin State | Barker | 12- 9-5 | 2 | 62 | 2 | 70 |
| Twin State | Hern | 2- 9-5 | 4 | 360 | 4 | 246 |
| Total Twin State | | | | | 6 | 316 |
| TOTAL EARLSBORO | | | 285 | 93,208 | 283 | 90,209 |

## LITTLE RIVER

| Company | Farm | Location | Aug. 29 Wells | Aug. 29 Prod. | Aug. 22 Wells | Aug. 22 Prod. |
|---|---|---|---|---|---|---|
| Amerada | Nitey | 2- 7-6 | 3 | 1,355 | 3 | 1,395 |
| Amerada-Wilcox | Fore | 35- 8-6 | 2 | 335 | 2 | 355 |
| Total Amerada | | | 5 | 1,690 | 5 | 1,750 |
| Barnsdall | Hotulke | 22- 7-6 | 2 | 1,623 | 2 | 1,631 |
| Blackwell | Bennett | 11- 7-6 | 3 | 1,780 | 3 | 2,755 |
| Blackwell | Nitey | 35- 8-6 | 6 | 1,568 | 6 | 1,449 |
| Total Blackwell | | | 9 | 4,971 | 9 | 4,204 |
| Carter | Cotcham | 23- 7-6 | 1 | 370 | 1 | 380 |
| Carter | Cudjo | 23- 7-6 | 1 | 311 | 0 | 0 |
| Carter | Fish | 36- 8-6 | 6 | 785 | 6 | 790 |
| Carter | Harjo C | 11- 7-6 | 1 | 1,600 | 1 | 8,560 |
| Carter | Harjo M | 13- 7-6 | 2 | 2,127 | 1 | 1,710 |
| Carter | Jackson | 11- 7-6 | 3 | 1,600 | 3 | 1,600 |
| Carter | Lena | 10- 7-6 | 1 | 1,600 | 1 | 1,600 |
| Carter | Larney | 24- 7-6 | 1 | 1,600 | 1 | 1,600 |
| Carter | Moore | 11- 7-6 | 1 | 1,600 | 1 | 1,600 |
| Carter | Tewee | 14- 7-6 | 2 | 2,400 | 2 | 2,155 |
| Carter | Wilson | 12- 7-6 | 1 | 1,602 | 1 | 1,600 |
| Total Carter | | | 20 | 15,595 | 18 | 21,595 |
| Champlin | Tewee | 14- 7-6 | 1 | 800 | 1 | 2,240 |
| Continental | Cosar L | 36- 8-6 | 7 | 1,425 | 7 | 1,315 |
| Continental | Cosar M | 25- 8-6 | 1 | 395 | 1 | 395 |
| Cont. Fisher | Milsey | 11- 7-6 | 1 | 1,550 | 1 | 1,765 |
| Total Continental | | | 9 | 3,370 | 9 | 3,475 |
| Empire | Charty | 24- 7-6 | 1 | 0 | 1 | 500 |
| Gypsy | Brown | 33- 8-6 | 1 | 2,145 | 1 | 1,356 |
| Gypsy | Campbell | 33- 7-6 | 2 | 197 | 1 | 195 |
| Gypsy | Conard | 22- 7-6 | 1 | 1,392 | 1 | 1,202 |
| Gypsy | Cosar-M | 25- 8-6 | 2 | 17 | 2 | 2 |
| Gypsy | Cosar-W | 36- 8-6 | 2 | 647 | 2 | 732 |
| Gypsy | Gotcha | 23- 7-6 | 2 | 1,592 | 2 | 1,812 |
| Gypsy | Denmark | 11- 7-6 | 2 | 1,600 | 2 | 2,342 |
| Gypsy | Hulhoke | 14- 7-6 | 5 | 4,190 | 5 | 4,214 |
| Gypsy | Mungee | 1- 7-6 | 1 | 25 | 1 | 25 |
| Gypsy | Pottie | 35- 8-6 | 4 | 701 | 4 | 570 |
| Gypsy | Renton | 11- 7-6 | 3 | 1,122 | 1 | 1,032 |
| Total Gypsy | | | 25 | 13,631 | 25 | 13,485 |
| Indep.-McCul | Davis-R | 13- 7-6 | 2 | 920 | 2 | 2,250 |
| Indep. | Harris | 23- 7-6 | 2 | 1,741 | 3 | 1,954 |
| Indep. | Tewee | 14- 7-6 | 2 | 1,605 | 2 | 2,640 |
| Indep. & W. E. | Davis | 2- 7-6 | 3 | 1,130 | 3 | 1,395 |
| Indep. | Williams | 15- 7-6 | 1 | 1,575 | 0 | 0 |
| Total Independent | | | 10 | 6,971 | 10 | 8,239 |
| I. T. I. O. | Campbell | 1- 7-6 | 1 | 242 | 1 | 257 |
| I. T. I. O. | Dungan | 35- 8-6 | 3 | 1,022 | 3 | 1,388 |
| I. T. I. O. | House-MA | 1- 7-6 | 1 | 31 | 1 | 46 |
| I. T. I. O. | House-WE | 1- 7-6 | 1 | 65 | 1 | 37 |
| I. T. I. O. | House-B | 2- 7-6 | 4 | 1,313 | 4 | 1,286 |
| I. T. I. O. | Hull | 26- 8-6 | 3 | 1,264 | 3 | 1,188 |
| I. T. I. O. | Jackson | 1- 7-6 | 3 | 1,038 | 3 | 1,001 |
| I. T. I. O. | McCulla | 1- 7-6 | 3 | 656 | 3 | 688 |
| I. T. I. O. | Nitey | 1- 7-6 | 6 | 484 | 6 | 463 |
| I. T. I. O. | Phoebe-A | 36- 8-6 | 3 | 372 | 3 | 436 |
| I. T. I. O. | Phoebe-B | 36- 8-6 | 4 | 194 | 4 | 199 |
| I. T. I. O. | Reed | 1- 7-6 | 1 | 31 | 1 | 31 |
| I. T. I. O. | Soketheche | 1- 7-6 | 3 | 661 | 3 | 673 |
| Total I. T. I. O. | | | 36 | 7,373 | 36 | 7,963 |
| Magnolia | Cruse | 2- 7-6 | 4 | 1,123 | 4 | 1,200 |
| Magnolia | Denby | 11- 7-6 | 2 | 1,992 | 2 | 1,610 |
| Magnolia | Dixon | 31- 8-7 | 1 | 3 | 1 | 0 |
| Magnolia | Harjo-A | 14- 7-6 | 2 | 1,660 | 1 | 1,620 |
| Magnolia | Pottie | 35- 8-6 | 3 | 650 | 3 | 680 |
| Magnolia | Reed | 22- 7-6 | 1 | 1,854 | 2 | 1,240 |
| Total Magnolia | | | 13 | 7,282 | 13 | 6,350 |
| Mid-Continent | Brunner | 11- 7-6 | 3 | 2,300 | 1 | 1,615 |
| Mid-Cont. | Eleck | 23- 7-6 | 1 | 1,500 | 1 | 2,435 |
| Mid-Cont. | Smith | 5- 7-7 | 1 | 65 | 1 | 65 |
| Mid-Cont. | Wadsworth | 36- 8-6 | 7 | 460 | 7 | 700 |
| Total Mid-Continent | | | 12 | 4,325 | 10 | 4,815 |
| W. B. Pine | Hoyecha | 26- 8-6 | 2 | 867 | 2 | 937 |
| Pine-Phillips | Pottie | 35- 8-6 | 2 | 587 | 2 | 405 |
| Total Pine | | | 4 | 1,454 | 4 | 1,342 |
| Prairie-Amer | Sunny | 14- 7-6 | 4 | 3,205 | 4 | 7,910 |
| Prairie | Chilcoat | 25- 8-6 | 3 | 940 | 3 | 710 |
| Prairie | Dungan | 35- 8-6 | 1 | 40 | 1 | 30 |
| Prairie | Gibson | 14- 7-6 | 3 | 3,620 | 2 | 3,337 |
| Prairie | Harris | 14- 7-6 | 2 | 1,875 | 2 | 1,800 |
| Prairie | House | 2- 7-6 | 4 | 800 | 4 | 795 |
| Prairie | Talley | 14- 7-6 | 2 | 1,170 | 1 | 1,620 |
| Total Prairie | | | 19 | 11,650 | 17 | 16,202 |
| Pure | Cotcha | 14- 7-6 | 5 | 4,275 | 5 | 4,306 |
| Pure | Harjo | 11- 7-6 | 2 | 1,689 | 2 | 1,584 |
| Total Pure | | | 7 | 5,964 | 7 | 5,890 |
| Reiter-Foster | Bunyard | 14- 7-6 | 3 | 4,685 | 2 | 1,712 |
| Roxana | Caesar | 11- 7-6 | 1 | 153 | 1 | 162 |
| Roxana | Hotulke | 23- 7-6 | 1 | 2,500 | 1 | 1,587 |
| Roxana | Johnson | 13- 7-6 | 2 | 656 | 2 | 622 |
| Total Roxana | | | 4 | 3,309 | 4 | 2,371 |
| Shaffer | Narcome | 36- 8-6 | 2 | 280 | 1 | 355 |
| Sinclair | Cosar | 36- 8-6 | 3 | 1,815 | 3 | 1,815 |
| Sinclair | Haney | 12- 7-6 | 1 | 190 | 1 | 80 |
| Sinclair | Tewee | 14- 7-6 | 1 | 800 | 1 | 800 |
| Total Sinclair | | | 5 | 2,805 | 5 | 2,695 |
| Skelly | Carl | 14- 7-6 | 1 | 1,322 | 1 | 617 |
| Slick | Williams | 15- 7-6 | 1 | 380 | 1 | 1,600 |
| Snowden et al | Tiger | 13- 7-6 | 2 | 3,220 | 1 | 0 |
| Superior | Soketheche | 1- 7-6 | 1 | 10 | 1 | 10 |
| Texas-Indep | Hotulke | 23- 7-6 | 2 | 1,510 | 2 | 3,845 |
| Texas | Coker | 1- 7-6 | 3 | 905 | 3 | 905 |
| Texas | Janey | 11- 7-6 | 2 | 1,185 | 1 | 1,145 |
| Total Texas | | | 7 | 3,600 | 6 | |
| Tidal | House | 1- 7-6 | 3 | 540 | 3 | 535 |
| Tidal | Johnson | 1- 7-6 | 1 | 25 | 1 | 30 |
| Total Tidal | | | 4 | | 4 | 565 |
| Twin State | Lowe | 25- 8-6 | 1 | 165 | 1 | 175 |
| TOTAL LITTLE RIVER | | | 207 | 106,541 | 194 | 115,676 |

## SUMMARY

| | Aug. 29 Wells | Aug. 29 Prod. | Aug. 22 Wells | Aug. 22 Prod. |
|---|---|---|---|---|
| **TOTAL BOWLEGS** | **329** | **52,403** | **327** | **53,034** |
| **TOTAL EARLSBORO** | **285** | **93,208** | **283** | **90,209** |
| **TOTAL SEMINOLE** | **292** | **48,078** | **294** | **47,825** |
| **TOTAL SEARIGHT** | **69** | **12,177** | **69** | **12,291** |
| **TOTAL LITTLE RIVER** | **207** | **106,541** | **194** | **115,676** |
| **TOTAL** | **1,182** | **312,407** | **1,167** | **319,035** |
| **Average per well** | | **264** | | **273** |

# Completions in Oklahoma and Kansas, Week Ended September 1, 1928

## OKLAHOMA

### Cotton County

| Company | Well No. | Location | Depth | Init. Prod. |
|---|---|---|---|---|
| Moore et al | 1 | SEc NW 2-2-10W | 2174-2181 | 50 |
| Everts | 1 | NWc NE 10-5-13W | T.D. 2020 | Dry |

### Creek County

| | | | | |
|---|---|---|---|---|
| Flynn et al | 1 | NE SE 17-14-8 | 1070-1085 | 10M |

### Grady County

| | | | | |
|---|---|---|---|---|
| Carter | 7 | SW SE 8-3-5 W | 1813-1821 | 80 |

### Hughes County

| | | | | |
|---|---|---|---|---|
| Furhman | 1 | NE NW SE 26-9-10E | T.D. 3168 | Dry |

### Jefferson County

| | | | | |
|---|---|---|---|---|
| Bridwell et al | 5 | CWL SE SW 24-6-6 | T.D. 2254 | Dry |
| McGinley et al | 5 | SW NW SE SE 17-7-5 | 778-792 | 25 |
| McGinley | 2 | NW NE NW 20-7-5 | 768-790 | 37 |

### Kay County

| | | | | |
|---|---|---|---|---|
| Doner | 1 | SW NW 21-29-3 | 1638-1642 | .8M |

### Logan County

| | | | | |
|---|---|---|---|---|
| Sinclair | 1-A | SE 18-19-4W | 6060-6104 | 2958 |
| Roxana | 1 | NE 19-19-4W | 6063-6106 | 2310 |
| Roxana | 1 | SE NE 30-19-4 | 5990-6035 | 575 |
| Slick | 1 | SW CW 28-17-1E | 4654-4666 | 35 |
| Champlin | 1 | SE SW 8-19-4W | T.D. 6726 | Dry |

### Muskogee County

| | | | | |
|---|---|---|---|---|
| Robinson et al | 1 | C SW NE 8-13-16 | 2002-2090 | 10 |

### Okfuskee County

| | | | | |
|---|---|---|---|---|
| Champlin | 10 | NE SW SE 15-11-11 | 3460-3480 | 510 |
| Champlin | 8 | NE NW NE 22-11-11 | 3490-3504 | 810 |
| Umburn | 1 | SE SW SE 2-10-11 | 1631-1651 | 50 |

### Okmulgee County

| | | | | |
|---|---|---|---|---|
| Texas | 2 | SE 8-15-14 | 768-805 | 25 |
| Rebold | | SW SE 3-14-11 | T.D. 1926 | Dry |
| Denver P&R | | CNL SW NE 32-13-11 | T.D. 3762 | OWD Dry |
| B&B | 1 | NW SW NW 21-14-13 | T.D. 2764 | Dry |
| McInturff et al | 1 | SE NE SE 4-12-14 | T.D. 1225 | Dry |

### Osage County

| | | | | |
|---|---|---|---|---|
| Marland Gas | 4 | C SW NW 22-24-7 | 1168-1201 | 6M |
| Osage Gas | 390 | CEL SW NE 32-24-12 | 1033-1036 | ¾M |
| Devonian | 1 | SW 30-21-10 | 1980-1999 | 7M |
| S. S. Home | 10 | NE SW NE 5-20-11 | 1735-1742 | 35 |
| Carter | 10 | NE NW SE 5-26-6 | T.D. 2930 | Dry |

### Pawnee County

| | | | | |
|---|---|---|---|---|
| Mann et al | 1 | NE NW SE 22-20-9 | T.D. 2955 | Dry |

### Pontotoc County

| | | | | |
|---|---|---|---|---|
| Jolly-Ogg | 2 | NE SE SW 29-5-5 | 2336-2364 | 30 |

### Pottawatomie County

| | | | | |
|---|---|---|---|---|
| Magnolia | 2 | NW SE SW 14-7-4 | 4000-4083 | 707 |
| Independent | 2 | SW NE SE 19-7-5 | 4160-4192 | 3990 |
| Independent | 3 | 19-7-5 | 4092-4265 | 5105 |
| Slick | 4 | SE SW SE 19-7-5 | 4128-4176 | 10980 |

### Seminole County

| | | | | |
|---|---|---|---|---|
| Gypsy | 9 | SE NW SE 1-9-5E | 4333-4340 | 3670 |
| Superior | 2 | NW 1-9-5 | 4296-4312 | 465 |

| Company | Well No. | Location | Depth | Init. Prod. |
|---|---|---|---|---|
| Burk-Greis et al | 1 | SW NE 6-9-6 | 4353-4367 | 1968 |
| Carter | 4 | NE SW 6-9-6 | 4317-4333 | 5745 |
| Pure | 1 | NE 15-9-7 | 3484-3485 | 315 |
| Sinclair | 6 | NE NW NE 4-10-8 | 3322-3422 | OWD 20 |
| Carter | 1 | NW 8-8-6 | 4305-4390 | 730 |
| Twin State | 1 | NW NE NE 6-8-6 | 4252-4267 | 905 |
| Gypsy | 2 | SW NW NE 36-8-6 | 4350-4357 | 420 |
| Shaffer | 2 | NW SW NE 36-8-6 | 4443-4449 | 317 |
| Carter | 1 | SE 10-8-6 | 4167-4172 | 3980 |
| Continental | 2 | SE SW SW 11-7-6 | 3213-4221 | 4645 |
| Gypsy | 2 | SE SW SE 11-7-6 | 4316-4325 | 2342 |
| Magnolia | 1 | NE SE NW 11-7-6 | 4110-4142 | 1792 22 hrs. |
| Magnolia | 2 | SE NW 11-7-6 | 4179-4200 | 236 |
| Indep. | 1 | SW 13-7-6 | 4285-4300 | 2170 |
| Roxana | 1 | NW SW NW 13-7-6 | 4251-5265 | 3220 |
| Carter | 1 | SW NW NE 14-7-6 | 4339-4347 | 4310 |
| Gypsy | 2 | NE SE SE 14-7-6 | 4516-4525 | 747 |
| Gypsy | 3 | NW SW SE 14-7-6 | 4489-4497 | 527 |
| Indep. | 1 | NW NE SE 14-7-6 | 4335-4345 | 1590 |
| Mid-Continent | 1 | NW NE SE 23-7-6 | 4307-4312 | 3070 |
| Pure | 3 | NE NW NE 23-7-6 | 4367-4380 | 3580 |
| Pure | 5 | NE SE NE 23-7-6 | 4264-4271 | 2810 |
| Sinclair | 1 | SE NW SW 18-5-8 | T.D. 2700 | 30 |
| Sunray | 3 | SW NW SE 18-5-8 | 2691-2693 | 1320 |
| Mid-Kans | 3 | SW NW NE 25-9-6 | T.D. 4425 | Dry |
| Indep. | 1 | SW NE NW 13-7-6 | T.D. 4407 | Dry |
| Sinclair | 1 | SE 15-7-6 | T.D. 4375 | Dry |
| Sunray | 1 | SE NE 7-5-8 | T.D. 2815 | Dry |

### Stephens County

| | | | | |
|---|---|---|---|---|
| Brannon et al | 2 | SE SW SE 19-1-8W | T.D. 1800 | Dry |
| Murphy | 14 | NE NW SW 12-2-8W | | Dry |
| Pace et al | 7 | NE NW NW 18-2-7 | 1518-1525 | 150 |
| R. Carter | 2 | SW SE 34-1-8W | 1650-1670 | 20 |

### Tillman County

| | | | | |
|---|---|---|---|---|
| Bray et al | 1 | C SE NW 9-1-15W | T.D. 850 | Dry |
| Bundy | 1 | CNL S½ SE 23-2-17W | T.D. 810 | Dry |

## KANSAS

### Butler County

| | | | | |
|---|---|---|---|---|
| Mohawk | 4 | NWc SE NE 6-27-6E | 2743-2761 | 150 |
| Ramsey et al | 2 | CWL SW NW 5-27-6 | 2730-2795 | 150 |
| Davis et al | 7 | NE SW SW 3-27-6 | 3133-3152 | 200 |
| Wichita | 1 | NEc NW NE SW 13-26-4 | T.D. 2670 | Dry |

### Cowley County

| | | | | |
|---|---|---|---|---|
| Roth-Faurot | 1 | NEc NW 14-32-3 | T.D. 3446 | Dry |

### Dickinson County

| | | | | |
|---|---|---|---|---|
| Kansas et al | 1 | NWc SE 23-15-4E | T.D. 2500 | Dry |

### Elk County

| | | | | |
|---|---|---|---|---|
| Denton et al | 1 | NWc 15-31-10E | 1988-2021 | 20 |

### Harvey County

| | | | | |
|---|---|---|---|---|
| Roxana | 1 | NE SW SE 11-23-2W | 2940-2972 | 8M |

### Marion County

| | | | | |
|---|---|---|---|---|
| Givens et al | 1 | SE SW NE 14-17-4E | 2375-2417 | 20 |

### Russell County

| | | | | |
|---|---|---|---|---|
| Wilcox | 3 | SEc 18-12-15W | 2989-3019 | OWD 48 |

### Sedgwick County

| | | | | |
|---|---|---|---|---|
| Gypsy et al | 1 | SE NE SE 12-26-1W | 3364-3367 | 1700 |

# Completions in North Louisiana and Arkansas, Week Ended August 30

### Louisiana—Caddo Parish—Pine Island

| Company | Well | Location | Depth | Yield |
|---|---|---|---|---|
| Magnolia Pet. Co. | Robertshaw No. 22 | 23-21-15 | 4420 | salt water, abnd. |

### East Texas—Harrison County

| | | | | |
|---|---|---|---|---|
| Nichols et al | M. R. Akin No. 1 | Daugherty HRS | 2308 | dry, abnd. |
| Nick Barbare | Furrh No. 5 | J. Short HRS | 2381 | 1M gas |

### Panola County

| | | | | |
|---|---|---|---|---|
| Ark. Nat. Gas Co. | Burns No. 2 | Birdsong HRS | 1023 | salt water, abnd. |
| D. Thomason | Crenshaw No. 8 | B. C. Jordan HRS | 961 | 6M gas |
| D. Thomason | Crenshaw No. 9 | B. C. Jordan HRS | 944 | 5M gas |
| S. H. Gardner et al. | Brumble No. 3 | B. C. Jordan HRS | 964 | 3M gas |
| Texas Company | Brumble No. 5 | John Womack HRS | 980 | 2M gas |

### Arkansas—Stephens

| | | | | |
|---|---|---|---|---|
| Autrey Oil Co. | N. Martin B-2 | 6-14-20 | 1168 | 1M gas |

### Union County—Rainbow City

| Company | Well | Location | Depth | Yield |
|---|---|---|---|---|
| Magna Prod. Co. | Townsend No. 7 | 10-17-14 | 3240 | 100 bbls. |
| C. E. Murdock et al. | Dumas No. 2 | 11-17-14 | 3212 | 100 bbls. |
| C. E. Murdock et al. | Dumas No. 3 | 11-17-14 | 3161 | 300 bbls. |
| Oil Well Corpn. | W. H. Perdue B-1 | 10-17-14 | 3293 | dry, abnd. |
| Oil Well Corpn. | Slade No. 5 | 3-17-14 | 3251 | 912 bbls. |
| Patterson & Neighbors | Barnett No. 1 | 33-17-14 | 3350 | dry, abnd. |
| Pure Oil Co. | E. F. Gregory B-1 | 10-17-14 | 3888 | dry, abnd. |
| Rovenger Oil Co. | W. H. Perdue No. 3 | 10-17-14 | 3273 | salt water, abnd. |
| Rushing et al | Gregory No. 3 | 11-17-14 | 3225 | 115 bbls. |

### Smackover

| | | | | |
|---|---|---|---|---|
| Imperial O. & G. Co. | Central Bank No. 1 | 1-17-15 | 3401 | dry, aband. |

### Union County—Upland

| | | | | |
|---|---|---|---|---|
| Marr & Hoosier | Horton No. 1 | 12-18-15 | 3508 | dry, aband |

# New Locations in Louisana and Arkansas, Week Ended August 30

### Louisiana

Ouachita parish—Magnolia Pet. Co., Millsaps 2, SE NE 36-20-4E; Jordan Drilling Co., Cole 2, SE NW 6-18-14E.
Union parish—Feazel & Smith, Steele 1, SE NW 16-20-4E.
LaSalle parish—Randall et al., Urania 1, 12-20-1E, H. L. Hunt Inc., Urania B-7, NW SE 7-10-2E.
Webster parish—Arkansas Nat. Gas Corp. L. & A. No. 1, 660W 660 S. cor sec 35-23-11; Magnolia Pet. Co. Robards 1, NE NW 31-23-11.
Claiborne parish—Dixie Oil Co. Gilbert No. 1, NE NW 27-21-5W.
Bossier parish—Arkansas Nat. Gas Co., Van Hoose B-4, SW NE 36-16-12.

### Arkansas

Nevada county—Autrey Oil Co., Havnie No. 1, NE SW 6-14-20.
Calhoun county—Amerada Pet. Co. Matlock No. 1, SE SW 10-12-13.
Johnson county—Arkansas Nat. Gas Corp. Houston No. 1, SE NW 14-10-24.
Union county—Marine Oil Co., J. F. Sample No. 1, NE NW 7-1-17E. Ohio Ohio Oil Co., Crain No. 8, NE SE 1-17-14; C. B. Nash No. 1 SE SW 6-17-13.

# Drilling Operations in Oklahoma and Kansas, Week Ended Aug. 25th and Sept. 1st, 1928

| | Sept. 1 Loc. | Rigs | Drg. | S.D. | Week Ended Total | Aug. 25 Loc. | Rigs | Drg. | S.D. | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| OKLAHOMA | | | | | | | | | | |
| Osage | 7 | 7 | 23 | .. | 35 | 5 | 5 | 25 | .. | 35 |
| Bristow-Cushing | 5 | 4 | 31 | 7 | 47 | 3 | 4 | 31 | 8 | 46 |
| North Oklahoma | 8 | 7 | 44 | 32 | 91 | 9 | 6 | 52 | 28 | 95 |
| South Oklahoma** | 8 | 4 | 46 | 25 | 83 | 10 | 5 | 85 | 28 | 128 |
| Muskogee | .. | 9 | 33 | 32 | 74 | .. | 9 | 37 | 27 | 73 |
| Okmulgee-Briston | 10 | 33 | 68 | 24 | 135 | 14 | 35 | 63 | 22 | 134 |
| Seminole Dist. | 14 | 69 | 344 | 30 | 457 | 17 | 74 | 357 | 47 | 495 |
| Total Oklahoma | 52 | 133 | 589 | 150 | 924 | 58 | 138 | 650 | 160 | 1,006 |
| KANSAS | 80* | ... | 190 | 66 | 336 | 76* | .. | 179 | 64 | 319 |
| GRAND TOTAL | 132 | 133 | 779 | 216 | 1,058 | 134 | 138 | 829 | 224 | 1,325 |

**No report available for Ardmore district.

# Why ?

The operation of your station depends absolutely upon the reliability of your auxiliaries—regardless of the type of compressors you use.

You do not hesitate to entrust this heavy "key" responsibility to vertical engines for your auxiliary power?

*Why, then, should you hesitate before adopting Hope Vertical Gas Compressors that embody these very same time-tested principles of design?*

HOPE

Hope Vertical Compressors are making notable records for stand-up-ability and economy under the most trying operating conditions. Time has resolved all doubts.

Hope Verticals are profit-factors which gas men must consider seriously.

*Bulletin 1601*

ENGINEERS CONTRACTORS

HOPE ENGINEERING COMPANY

DESIGNERS MANUFACTURERS

MOUNT VERNON, OHIO, U.S.A.

NEW YORK, N.Y. DALLAS, TEX. TULSA, OKLA. CASPER, WYO. HOUSTON, TEX. SHREVEPORT, LA. LOS ANGELES, CAL.

# Completions in Texas, Week Ended September 1, 1928

## NORTH TEXAS

### Archer County

| Company | Well Farm | Location Survey | Depth | Init. Prod. |
|---|---|---|---|---|
| Arco | 6-Perkins | D.C.S.L. League 3, Blk 14 | 1002-1020 | 15 |
| Pandem | 11-Hudson | Harris Blk 80 | 1144-1156 | 10 |
| Stumpf | 2-Wallace | DCSD League 3, Blk 11 | 999-1007 | 20 |
| Brown et al | 1-Dempsey | DCSL League 3, Blk 10 | T.D. 1825 | Dry |
| Hart et al | 2-Moss | HT&B Sec 1 | T.D. 963 | Dry |
| Long et al | 1-Dedlhouser | Edwards Sec 1 | T.D. 1504 | Dry |
| Looney-King | 1-King | Hendry Abst 163 | T.D. 1366 | Dry |
| Marland et al | 1-Ferguson | Patterson Blk 9 | T.D. 1803 | Dry |
| Staley et al | 1-Aber. | Harris Blk 9 | T.D. 1550 | Dry |

### Crane County

| | | | | |
|---|---|---|---|---|
| Gulf | 53-McElroy | GCSD Sec 201 | 2863-2918 | 175 |

### Knox County

| | | | | |
|---|---|---|---|---|
| Deep Rock | 1-Moore | GCSF Sec. 1 | T.D. 3511 | Dry |

### Montague County

| | | | | |
|---|---|---|---|---|
| Lanfair et al | 1-McNabb | McCollier Sec 17 | T.D. 2008 | Dry |

### Wichita County

| | | | | |
|---|---|---|---|---|
| Grisham | 1-Lackridge | Netherly Blk 130 | T.D. 875 | Dry |
| O'Neil | 2-Rio | H&TC Sec 31 Blk 5 | T.D. 1550 | Dry |
| Stumpf | 1 | Blk 31 League 4 | T.D. 1854 | Dry |
| Hammond et al | 3-McCarty | Eaves | 1329-1362 | 40 |
| Magnolia | 1-Pace | Scott | 1226-1233 | 117 |
| Omohundro | 15-Pace | Scott | 1227-1232 | 100 |

### Wilbarger County

| | | | | |
|---|---|---|---|---|
| Consol | 10-Waggoner | H&TC Sec 5 Blk 5 | 1867-1888 | 75 |
| Derby | 1-Waggoner | Purnell | 1890-1902 | 100 |
| Fain et al | 1-Wag. | MEP&P Sec 43 | 2389-2391 | 120 |
| Pet Prod | 5-Waggoner | HPTC Sec 16 | 2438-2447 | 77 |
| Simms | 3-Waggoner | H&TC Sec 5-5 | 1861-1877 | 172 |
| Empire | 1-Waggoner | MEP&P Sec 41 | T.D. 2575 | Dry |
| O'Neil | 1-Wag. | H&TC Sec 30 | T.D. 2420 | Dry |
| Pigg et al | 1-McCrary | H&TC Sec 64 | T.D. 2654 | Dry |
| Shaw | 1-Wag. | H&TC Sec 23 | T.D. 2476 | Dry |

### Young County

| | | | | |
|---|---|---|---|---|
| Allen | 1-Sims | TEL Sec 610 | T.D. 835 | Dry |
| Atlantic et al | 1-Boone | BBB&C | T.D. 500 | Dry |
| Ginsberg | 1-Beacher | TEL Sec 1991 | T.D. 601 | Dry |
| McElroy et al | 1-Choate | TEL Sec 258 | T.D. 755 | Dry |
| Willis et al | 1-Gray | TEL Sec 625 | T.D. 750 | Dry |
| Kleiner et al | 17-Langston | TEL Sec 1490 | 567-583 | 25 |
| Kleiner et al | 18-Langston | TEL | 560-575 | 75 |
| Mook-Tex | 3-Davis | TEL 1487 | 555-573 | 25 |

## NORTH EAST

### Brown County

| | | | | |
|---|---|---|---|---|
| Gutzman et al | 4-Stanley | Smith Blk 139 | 420-434 | 3 |
| Gutzman et al | 5-Stanley | Smith Blk 139 | 420-434 | 8 |
| Bradstreet et al | 4-Eubanks | Mitchell Blk 141 | 1262-1300 | 20 |
| Charter | 3-Byler | T&NO Blk 43 | 1325-1341 | 220 |
| Cranfill | 11-Eubanks | Mitchell Blk 141 | 1221-1236 | 125 |
| Forest | 5-Moore | DeBord Blk 4 | 1247-1269 | 140 |
| Green | 1-Hill | Walker Sec 8 | 843-145 | 5 |
| Gutzman et al | 3-Stanley | Smith Sec 139 | 422-433 | 8 |
| Redmond et al | 1-Connery | Bassett Blk 292 | T.D. 650 | Dry |
| Anchor | 2-Taylor | Majors Blk 507 | T.D. 2056 | Dry |
| Duffey et al | 1-Hill | Mudgett Blk 63 | T.D. 1337 | Dry |

### Coleman County

| Company | Well Farm | Location Survey | Depth | Init. Prod. |
|---|---|---|---|---|
| Manhattan et al | 1-Dodgen | Bynum Sec 119, Blk 272 | T.D. 2010 | Dry |
| Nolan et al | 11-Stevens | School Sec 5, Blk 57 | T.D. 2254 | Dry |
| Shorpe | 1-Thor | Kilgore | T.D. 1845 | Dry |
| Belmont et al | 1-Kirkpatrick | Cleveland 3-495 | 1394-1401 | .5M |
| Byrd et al | 2-Moody | Scott 12-665 | 1868-1870 | 200 |
| Derby | 6-Jennings | Lipscomb Blk 94 | 1138-1143 | 25 |
| English et al | 1-Harris | Univ. Blk 519 | 3939-4080 | 5M&20 |

### Runnels County

| | | | | |
|---|---|---|---|---|
| Western | 1-Schneider | Wall Blk 378 | T.D. 2008 | Dry |

## PANHANDLE

### Carson County

| | | | | |
|---|---|---|---|---|
| Wenrock | 1-Cooper | I&GN 3-Blk 9 | 3148-3177 | 35 |

### Gray County

| | | | | |
|---|---|---|---|---|
| Phillips | 4-Jackson | H&GN Sec 88-Blk 2 | 2777-3025 | 25 |
| Magnolia | 13-Mirten | I&GN Sec 82-Blk 3 | T.D. 3518 | Dry |

### Hutchinson County

| | | | | |
|---|---|---|---|---|
| Gulf et al | 43-Dial | H&TC Sec 22 Blk 47 | 2952-2984 | 30 |

### Wheeler County

| | | | | |
|---|---|---|---|---|
| Wishkamper | 1-Fee | H&GN Sec 80, Blk 23 | 1555-1731 | 4M |
| Neudigate et al | 1-Sitter | H&GN Sec 33 Blk 24 | 2083-2140 | 26M |
| Clarke et al | 3-Purcell | H&GN Sec 52 Blk 17 | 1690-1710 | 18M |

## WEST TEXAS

### Fisher County

| | | | | |
|---|---|---|---|---|
| Cranfill | 13-Willingham | BBB&C Sec 199 | 3097-3112 | 682 12 Hrs. |

### Howard County

| | | | | |
|---|---|---|---|---|
| Marland | 1-Clay | W&NW Sec 139-29 | 1775-1779 | 40 |
| F.H.E. | 3-Roberts | W&NW Sec 136-29 | 1302-1310 | 387 18 Hrs. |
| Midwest | 1-Clay | W&NW Sec 139-29 | 1765-1779 | 60 |
| Owen et al | 6-Roberts | W&NW Sec 136-29 | 2971-3017 | 535 4½ Hrs. |

### Pecos County

| | | | | |
|---|---|---|---|---|
| Mazda et al | 3-Smith | TC Sec 24-194 | 1550-1705 | 155 1 Hr. |
| Mid-Kans | 16-Smith | TC Sec 33-194 | 1423-1635 | 1442 3 hrs. |
| Mid-Kans et al | 3-Yates | I&GN Sec 62-1 | 1150-1395 | 250 1 hr. |
| Roxana | 1-Smith | TC Sec 24-194 | 1673-1865 | 80 |

### Winkler County

| | | | | |
|---|---|---|---|---|
| Murchison | 1-Hendricks | PSL Sec 35-26 | 2855-2897 | 15000 |
| Murchison | 2-Lemar | PSL Sec 35-B-5 | 2745-2750 | 870 |
| Murchison | 2-Lemar | PSL Sec 35-B-5 | 2650-2710 | 5000 |
| Roxana-Tex | 6-Hendricks | PSL Sec 40-26 | 2565-2786 | 40000 |
| Gulf | 23-Hendricks | PSL Sec 45-26 | 2580-2790 | 25920 |
| Atlantic | 4-Hendricks | PSL Sec 36-26 | 2673-2715 | 15000 |
| Atlantic et al | 8-Hendricks | PSL Sec 40-26 | 2790-2800 | 12000 |
| So. Crude | 11-Hendricks | PSL Sec 33-26 | 2961-3004 | 100 |
| So. Crude | 1-Hendricks | PSL Sec 28-B-5 | 2923-3000 | 450 |
| Pure | 5-Hendricks | PSL Sec 45-26 | 2615-2635 | 18000 |
| So. Crude | 4-Hendricks | PSL Sec 44-26 | 3014-3025 | 638 |
| So. Crude | 2-Hendricks | PSL Sec 35-B-5 | 2920-3055 | 200 |
| Roxana-Tex | 3-Hendricks | PSL Sec 40-26 | 2769-2840 | 1200 |
| Rox-Tex | 1-Hendricks | PSL Sec 40-26 | 2793-2843 | 400 |
| Rox-Tex | 5-Grisham | PSL Sec 45-26 | 2775-2852 | 400 |
| Rox-Tex | 3-Cowden | PSL Sec 3-B-12 | 2900-2937 | 1863 |
| Rox-Tex | 2-Cowden | PSL Sec 3-B-12 | 3050-3052 | 200 1 Hr. |

# New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended September 1, 1928

### Creek County

| Company | Well No. Farm | Location | |
|---|---|---|---|
| McMann Oil | 1-Bond | NW 6-19-9 | OWD |
| Twin States | 3-Coachman | NW NE 20-17-7 | |
| Billingslea | 1-Deer | NW NE 19-17-9 | |
| Eliza Tim | 1-Sapulpa | C S ½ SW 2-17-11 | |
| Wallace et al | 1-Fife | NE NW 3-17-11 | |
| O'Rourke et al | 1-Sewell | SE SW NW 4-16-9 | |

### Grady County

| | | | |
|---|---|---|---|
| Okla. Gas Util | 2-School | SW NW NW 36-5-8W | |

### Jefferson County

| | | | |
|---|---|---|---|
| Bridewell et al | 6-Spring | CSL SW SW 24-6-6W | |
| Gypsy | 5-Busby | NE SW SE SW 17-7-5W | |

### Kay County

| | | | |
|---|---|---|---|
| Shaffer | 1-Mefford | C SE SW 18-29-1E | |

### Logan County

| | | | |
|---|---|---|---|
| Roxana | 4-Sebranek | SW SE NE 30-19-4W | |
| Roxana | 3-McCully | NW SE 30-19-4 | |
| Roxana | 4-McCully | SE NW SE 30-19-4 | |

### McIntosh County

| | | | |
|---|---|---|---|
| Wolfe | 1-Beck | NW SE 15-11-17 | |
| Weible | 2-Bonner | SE SW 25-11-17 | |

### Muskogee County

| | | | |
|---|---|---|---|
| H. Smith | 7-Franklin | CSL NW NW 30-15-16 | |
| Kimsey | 1-Runyan | SE NW SE 24-15-17 | |

### Okfuskee County

| Company | Well No. Farm | Location | |
|---|---|---|---|
| Robinson et al | 2-Severs | NW SE 35-11-9 | |
| Robinson | 3-Berryhill | SE NE SW 35-11-9 | |
| Kingwood | 1-Robinson | NW SW NW 12-10-11 | |

### Okmulgee County

| | | | |
|---|---|---|---|
| Wheeler et al | 1-Roberts | NE SE NW NE 32-15-13 | |
| Baroda et al | 1-Adam | NE 2-14-11 | OWD |
| Pine | 2-Burgess | C SW SW 17-12-13 | |

### Osage County

| | | | |
|---|---|---|---|
| Carriker et al | 1 | SW NE 11-26-8 | |
| Skelton-Moore | 5 | NE SW SW 33-26-12 | |
| Oliphant | 1 | SW 2-25-8 | |
| Branstetter | 1 | SE NE SE 22-22-11 | |
| Moore et al | | NE SE NW SW 9-21-9 | |
| Okla. Nat | 764 | SW NE NE 14-21-10 | |
| Devonian | 1 | NE SE SE 10-20-11 | |

### Payne County

| | | | |
|---|---|---|---|
| Fern | 1-Haymond | NW SW NW 15-19-5 | |

### Seminole County

| | | | |
|---|---|---|---|
| Magnolia | 1-Alicky | SE NE NE 1-8-5 | |
| I. T. I. O. | 12-Goforth | NE SW NE 15-8-6 | OWD |
| Shaffer | 3-Cherry | SW SE SE 23-7-4 | |
| Magnolia | 3-Wilbarn | SW NW SE 24-7-4 | |
| Magnolia | 4-Wilbarn | NW SW SE 24-7-4 | |

(*Continued on Page 48*)

You are cordially invited to visit our booths—95 and 96 in the Texas Building—at the 5th International Petroleum Exposition.

# Foamite Generators killed this big fire easily

The tank was 92 feet in diameter. The oil used was high gravity crude. It was fired in a twenty-mile wind. After ten minutes of free burning the inside of the tank was a volcano of flame and smoke, the heat terrific.

And, to greatly intensify the severity of the conditions, the *Firefoam* had to drop over twenty feet through this inferno before reaching the level of the burning oil.

But in twelve minutes the fire was under control and in nine more it was out.

Later, the oil was again fired and allowed to burn for seventeen minutes. Again, a terrifically hot fire. But, it was under control in four and one-half minutes and completely out in ten more minutes.

Two Model 30 FOAMITE Generators were used in these remarkable tests. Run in conjunction with a large oil company, these tests proved conclusively the efficiency of FOAMITE Generators to extinguish large oil fires.

If you have smaller tanks one Model 30, or a Model 15 or 25 may be sufficient. Why not have an American-LaFrance and Foamite representative study the conditions on your property? There are representatives at points convenient to all principal oil producing and refining centers. American-LaFrance and Foamite Corporation, Engineers and Manufacturers, Dep't E 14, Elmira, N. Y.

# AMERICAN-LAFRANCE AND FOAMITE PROTECTION

## A Complete Engineering Service For Extinguishing Fires

# New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended September 1, 1928

*(Continued from Page 46)*

| Company | Well No. Farm | Location |
|---|---|---|
| **Pottawatomie County** | | |
| Sinclair | 12-Blandon | SE SW SW 24-7-4 |
| Pure | 1-Thomas | SE NE NE 26-7-4 |
| Sinclair | 1-Bruno | CNL N½ NE 26-7-4 |
| Slick | 1-W Davis | SW NW NE 18-7-5 |
| Sinclair | 7-Kitchee | SW NW SW 19-7-5 |
| Twin State | 1-Sexton | NW 32-7-5 |
| Blackwell | 2-Baker | SE NW SE 11-7-6 |
| Carter | 3-Moore | NE NW 11-7-6 |
| Magnolia | 4-Denby | SW SE NW 11-7-6 |
| Sinclair | 2-Blanton | NE SW NW 11-7-6 |
| Texas | 3-Janey | NW SW 11-7-6 |
| Texas | 4-Janey | NE SW 11-7-6 |
| Magnolia | 1-J. Harjo | NW NE SW 13-5-7 |
| Ramsey | 1-Whitney | NW SW NE 19-5-8 |
| Westheimer-Daube. | 5-Wade | SW NE 19-5-8 |
| **Stephens County** | | |
| Carter R | 4-Burke | SE SW SW SE 34-1-8W |
| Murphy | 15-Fobb | SE NE NW SW 12-2-8 |
| Carter R | 2-Simpson | SW SE 34-1-8 |
| Carter R | 3-Burke | NE SW SW SE 34-1-8 |
| **Tulsa County** | | |
| Hayden | 4-Futrell | CWL NW SW 6-19-10 |
| **KANSAS** | | |
| **Butler County** | | |
| Swartz et al | 1-Randall | NW NE NW 22-24-4E |
| Galbreath et al | 1-Steel | SWc 26-25-4E |
| Ramsey et al | 3-Simpson | CSL SW NW 5-27-6 |
| Blue Stem | 3-Doughty | CNL NW SE 5-27-6 |
| Branson et al | 2-Beadles | SW NW SE 5-27-6 |
| **Chautauqua County** | | |
| Elmwood | 3-Hilton | C SE SW 12-32-9E |
| **Cowley County** | | |
| Roth-Faurot | 1-Ridings | SEc NW 31-32-6 |
| Foster-Deal | 1-Bennett | L-7-Blk 47, Winfield OWD |
| Roth-Faurot | 1-Wilcoxson | L-2 Blk 46 Winfield OWD |
| Roth-Faurot | 1-Johns | NE SW NE NE SW NE 30-31-5 OWD |
| **Elk County** | | |
| Hazlett et al | 1-Ferguson | SW NW NE 26-30-8E |
| **Greenwood County** | | |
| Empire | 1-Braddock | NWc 24-22-11E |
| Skelly | 6-Schwab | NE SW NE 30-22-12 |
| Haverhill | 19-Inthurm | C N¼ SE 4-23-13E |
| Tatlock et al | 1-Hull | SEc SW 12-26-10E |
| **Harvey County** | | |
| Roxana | 1-Harvey | SW NE SW 11-23-2W |
| **Marion County** | | |
| Derby | 1-McCoy | NE SW SE 14-17-4 |
| Johnson | 2-McCoy | SE NW SE 14-17-4 |
| Leck | 1-Church | NWc NE NE 22-17-4 |
| Watchorn | 1-Miller | SE SW NE 23-22-4 |
| **McPherson County** | | |
| Lario | 1-Martinson | NEc SE 9-19-3W |
| **Saline County** | | |
| Jones et al | 1-Robertson | NWc SW 27-14-2W |
| **Sedgwick County** | | |
| Hartman et al | 1-Froman | SEc SW 35-25-1E |
| Allinson et al | 1-Gsell | NE NW NE 24-26-1W |
| **Sumner County** | | |
| DeForest | 2-Frantz | C SE NE 35-30-2W |
| Roxana | 7-Wiles | CSL NE NW NE 25-31-2E |

**NORTH AND NORTH CENTRAL TEXAS**

| Company | Well No. Farm | Location | Survey |
|---|---|---|---|
| **Archer County** | | | |
| Continental | 1-Parrish | Hooper-Wade | Section 8 |
| Pet. Prod. et al | 1-Jackson | Blk 46 | Alridge |
| Texas | 2-Hayter | TEL Sec.2409 | |
| Texas | 5-Griffith | League 3, Blk 12, Denton County | |
| Pandem | 1-Young | Sec 2432 TE&L | |
| Pandem | 1-Garvey | Blk 66, Harris | |
| Madden-Hunt | 1-Richardson | Blk 1 Anderson Ranch | |
| **Brown County** | | | |
| Redmond et al | 2 | Blk 282 Bassett | |
| Humble | 6-Kilgore | Sec 3 Blk 789 Delgando | |
| Anderson et al | 1-Williams | Pruitt Blk 135 | |
| Bradstreet et al | 1-Wright | Blk 282 Jones | |
| Young et al | 10-Teston | Blk 151 Curlong | |
| French | 1-George | Cross | |
| Mitcham et al | 2-Keeler | Kenney 624 | |
| Charter | 10-Byoer | T&NO 43 | |
| Midwest Expl | 3-George | Cross | |
| Gutzman et al | 7-Stanley | Smith 139 | |
| Gutzman et al | 6-Stanley | Smith 139 | |
| Cross Cut | 1-Kellar | Mitchell 141 | |
| **Coleman County** | | | |
| Roth-Faurot | 1-Cox | BR&B 15 | |
| Gwinnup et al | 1-Morris | Anderson 262 | |
| Natl | 1-Farrell | Fowler 488 | |
| Sterling | 9-Haygood | Lapp 744 | |
| Samuels et al | 1-Robertson | Votan 224 | |
| Anzac et al | 1-Alexander | Quigley 739 | |
| **Concho County** | | | |
| Kemper et al | 1-Mallory | Blk 319 Winkle | |
| **Jack County** | | | |
| Walton | 2-Maxey | SP Abst 568 | |
| **Jones County** | | | |
| Roeser-Pendleton | 2-Grayson | T&P Sec 13 | |
| Roberts et al | 4-Grayson | T&P 13 | |
| Eastland et al | 1-Derrick | T&P 57 | |
| **McCulloch** | | | |
| Nash et al | 1-Shaffer | H&TC Blk 105 | |
| **Shackleford County** | | | |
| Midwest | 1-Matthews | ET Sec 58 | |
| Midson | 1-Nail | ET 110 | |
| Hope | 11-Davis | T&P 13 | |
| Tannehill | 8-Matthews | ET 58 | |
| Tex. Consol | 1-Reynolds | TP Sec 24 | |
| Roeser-Pend | 31-Cook | ET Sec. 60 | |
| Roeser-Pend | 30-Cook | ET Sec. 60 | |
| Roeser-Pend | 29-Cook | ET Sec. 60 | |
| Roeser-Pend | 28-Cook | ET Sec. 60 | |
| Roeser-Pend | 12-Cook | ET Sec. 61 | |
| Roeser-Pend | 11-Cook | ET Sec. 61 | |
| Roeser-Pend | 10-Cook | ET Sec. 61 | |
| **Throckmorton County** | | | |
| Holder | 1-Titus | Williams Abst. 830 | |
| **Wichita County** | | | |
| Hamon et al | 1-Burnside | Sharpe | |
| Underwood | 1-Pace | Sec. 18 Scott | |
| Magnolia | 2-Pace | Scott Sec. 118 | |
| Magnolia | 1-Allen | Blk 28 KWWFL | |
| Hines et al | 4-Waggoner | GCSF Abst. 772 | |
| Empire Hold | 5-Ancell | H&TC | |
| Clark | 3-Kemp | KWWFL Sec. 26 Blk. 20 | |
| Lambert et al | Fossett | ET Abst. 76 | |
| **Wilbarger County** | | | |
| Bass et al | 4-Waggoner | H&TC Sec 5 Blk 5 | |
| Lesh-McCall | 1-Waggoner | Calhoun | |
| Simms | 4-Waggoner | H&TC Sec. 5 Blk 5 | |
| **Young County** | | | |
| Pennell et al | 3-Johnson | Sergeant Abst. 253 | |
| Shappell | 3-Garrett | TE&L | |
| Mook-Tex | 4-Davis | TE&L Sec. 1487 | |
| Riggs et al | 11-McKinley | TEL Sec. 1489 | |
| Painter et al | 1-Stringer | TEL Sec. 252 | |
| Wise-Jackson | 1-McCluer | Sec. 1952 TE&L | |
| Reed et al | 1-Watson | YCSL Blk. 22 | |
| Boller et al | 7-Gregg | Rohus | |
| Weekly | 1-Jordan | TED Sec. 1466 | |
| Gwynn | 3-Kunkel | BBB&C Sec. 4 | |
| Pet. Prod | 5-Hennig | TEL Sec. 410 | |
| Roxana | 1-Haygood | TEL Sec. 1468 | |
| Pandem | 1-Burch | TEL Sec. 477 | |
| Justin | 2-Eddleman | TEL Sec. 2693 | |
| **PANHANDLE** | | | |
| **Carson County** | | | |
| Empire | 1-Crutchfield | I&GN Sec. 28, Blk. 4 | |
| Empire | 1-Pope | H&GN Sec. 242, Blk 2-B | |
| **Gray County** | | | |
| Danciger | 1-Thut | H&GN Sec. 3 | |
| Perkins et al | 1-Sanders | GCSF Sec. 4, Blk 1 | |
| **Hutchinson County** | | | |
| Rock Creek | 2-Johnson | A&B Sec. 28 | |
| Sand Creek | 2-Jasper | TC Sec. 23, Blk M-23 | |
| **WEST TEXAS** | | | |
| **Borden County** | | | |
| Tees et al | 1-Long | C Ne T&P Sec. 27, Blk 30 | |
| **Dawson County** | | | |
| Magnolia | 1-Jeter | Sec 1, Blk 34 TP | |
| **Fisher County** | | | |
| Cranfill et al | 2-Young | BBB&C Sec. 208 | |
| Cranfill et al | 1-Willingham | BBB&C Sec. 207 | |
| Cranfill et al | 2-Young | BB&C Sec. 199 | |
| **Howard County** | | | |
| Pure | 6-Chalk | W&NW 125 29 | |
| Coyle-Concord | 1-Roberts | W&NW 156 29 | |
| Witherspoon et al | 1-Abrams | TP 3 32 | |
| Marland | 1-Clay | W&NW 126 29 | |
| Taylor-Link | 1-Abrams | TP 3 32 | |
| Glasscock et al | 1-Abrams | TP 3 32 | |
| Magnolia | 13-Roberts | W&NW 136 29 | |
| **Irion County** | | | |
| Whitten et al | 1-Sawyer | H&TC 3032 Blk 24 | |
| **Loving County** | | | |
| Lockhart | 1-Wheat | W&NW Sec. 83, Blk. 1 | |
| **Mitchell County** | | | |
| Clopton et al | 1-McKinzie | H&TC 3-Blk 1-A | |
| **Pecos County** | | | |
| Cal Co | 3-Smith | TC Lease 1, Sec. 23, Blk 194 | |
| **Scurry County** | | | |
| Landreth | 1-Hillmer | H&TC Sec. 75, Blk 25 | |
| **Winkler County** | | | |
| So. Crude | T-67 Hendricks | PSL Sec 28 Blk 26 | |
| So. Crude | T-88 Hendricks | PSL Sec 28 Blk B-5- | |
| Atlantic | 1-Hendricks | PSL Sec 30 Blk B-5 | |
| Roxana-Tex | 6-Hendricks | PSL Sec 40 Blk 26 | |
| Murchison et al | 2-Hendricks | PSL Sec 34 Blk 26 | |
| Pure | 7-Hendricks | PSL Sec 45 Blk 26 | |
| Pure | 8-Hendricks | PSL Sec 45 Blk 26 | |

# How Midnight Minutes Saved Hours of Shutdown

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# Aluminum Stock Tanks Compared With Steel in Corrosion Tests

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Aug. 31

SOLUTION of the corrosion problem, insofar as it affects stock tanks on west Texas leases, is being sought in experiments under way in the University (Church & Fields) pool of Crane county.

Tests being made call for comparisons of corrosive action of hydrogen sulfide gas and sulfur oil on bolted and welded steel tanks installed in battery with others constructed of aluminum and its alloys.

The tests are being made jointly by the Aluminum Co. of America and the Parkersburg Rig & Reel Co., on the State-Lasseter lease of the Gulf Production Co., in the northeast part of the University field.

Two tanks made of aluminum and its alloys were installed last March in a battery of seven, which included five of steel construction. Arrangements were then made for the keeping of accurate records on oil, gas and water production, together with temperature readings. It is proposed later, probably next spring, to announce to the industry the findings obtained by study of the data recorded.

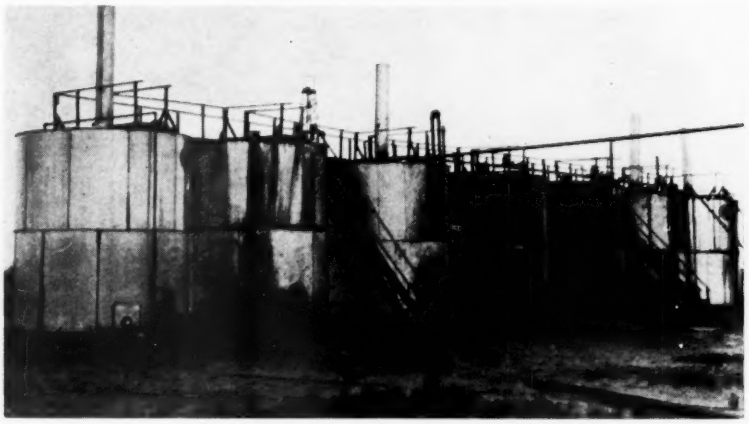
The tanks will be tested under both open and gas tight conditions, affording also a check on the influence of air or moisture in speeding up corrosion.

It is generally recognized that oxygen in air or water mixes with hydrogen sulfide to form sulfuric acid compounds, which attack steel.

Experience has shown that brines will corrode aluminum to some extent, but detailed data have not been available in the past on conditions existing inside tanks under conditions of actual oil field usage.

The two tanks made of aluminum and its alloys are each of 500-barrel capacity, 16 feet, two inches high and having inside diameter of 14 feet, nine inches. The one shown at the left in the accompanying picture is entirely of aluminum and its alloys; at the other end of the battery is a tank of composite construction, the lower ring and bottom being of steel, the top ring and deck of aluminum.

Use of the aluminum top ring and deck on the composite tank is calculated to remove the main source of iron sulfide scale resulting from acidulous influences which, in turn, are caused by the mixing of oxygen with hydrogen sulfide or sulfur oil vapors.



*Lease battery on Gulf Production Co.'s State-Lasseter property showing all aluminum stock at left; composite steel and aluminum tank at right; and steel tanks in center*

Elimination of scale is expected also to remove an influence previously bringing deterioration of tank bottoms through electrolytic action It is believed that rubber gaskets, ordinarily used in Parkersburg bolted tanks, will prevent to a large extent the possibility of galvanic corrosion at joints connecting the steel and aluminum plates.

The weight of aluminum is approximately 35 per cent that of steel by volume comparison, this being the lightest of all commercial metals except magnesium. Aluminum has a lower modulus of elasticity however, requiring a thicker section of metal where stiffness equal to steel is required.

Aluminum sheets .114-inch in thickness were used in the tank installation under test instead of the usual .109-inch. After taking this greater sheet thickness into consideration, the all-aluminum tank weighs approximately 37.3 per cent of similar size steel tanks, or respectively 2350 pounds as against 6300 pounds.

The following list of parts made public by the Aluminum Co. of America shows the kind of material used in the University field tank installations under test:

Explanation of grade symbols: 3S6 and 3SH—three-quarter hard and hard tempers of manganese-aluminum alloy containing 1 to 1.5 per cent manganese, balance commercially pure (99 per cent or better) aluminum; 17ST—"Duralumin" alloy of copper, magnesium, manganese and aluminum, having strength of usual sheet, or structural, steel; Alclad 17ST—Duralumin with coating of high purity (99 per cent or better) aluminum on both sides; 51SW—Strong alloy containing magnesium, silicon and aluminum; No. 43—Casting alloy containing silicon and aluminum.

## All Aluminum Tank

| Part | Material | Thickness | Grade |
|---|---|---|---|
| Upper Ring Side Sheets | Aluminum | .114 inch | 3S6 |
| Lower Ring Side Sheets | Aluminum | .114 inch | Alclad 17ST |
| Bottom | Aluminum | .114 inch | 3SH |
| Deck | Aluminum | .114 inch | 3SH |
| Ladder (2x2x3/16 inch angles) | Aluminum | | 17ST |
| Side and Bottom Channels | Aluminum | | 17ST |
| Manhole Ring | Aluminum | | 51SW |
| Fittings, Pressure Gage, and Thief Hole Cover | Aluminum (cast) | | No. 43 |
| Bolts and Nuts | Aluminum | | 17ST |

## Composite Steel-Aluminum Tank

| | | | |
|---|---|---|---|
| Bottom and Lower Ring | Steel | | 12 Gage |
| Upper Ring | Aluminum | .081 inch | 3S6 |
| Deck | Aluminum | .081 inch | 3SH |
| Inside Ladder, Channels, Bolts and Nuts of Upper Ring (Fixtures are regular cast iron and wrought fittings.) | | | |

Listed as standard by the Underwriters' Laboratories, Inc.

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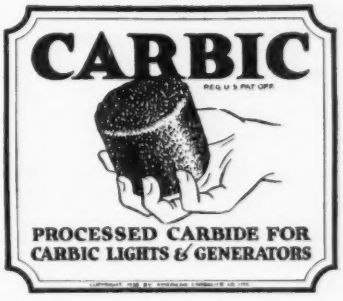


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# Standardization of Safety Practice

## Skelly Oil Co.'s 26 Oil Field Safety Rules

Staff Special

TULSA, Aug. 31

APPLICATION of standardization ideas to the problem of promoting safety in the same manner that the American Petroleum Institute has sought to standardize field materials, recently has been undertaken by the Skelly Oil Co.

C. L. Swim, safety director for the company, has sent to each superintendent a guide to follow in which are listed a great many of the safety features developed by various companies in the industry. With each feature is a clear explanation of the practical application of the standards to specific units of property on their leases.

The prevention of accidents in each of the branches of the industry is coming to be recognized as a problem of production or manufacture as the case may be. As such it is attracting probably as much attention as any other single operating problem.

Industrial safety in the sense of there being a definite program for the reduction of accident frequency is a movement of somewhat recent origin. The pioneer probably was the U. S. Steel Co. under the leadership of the late Judge Gary. Railroads were quick to embrace the idea.

Although the movement is of much more recent origin in the oil industry it has progressed with remarkable rapidity, possibly faster than in any other industry. This is true as a result of the alert leadership in the industry which is always seeking new and better ways to do a job.

Men in responsible positions in the industry have observed that operations conducted without a careful regard for safety have resulted in heavy costs; the measurable costs in dollars and the less tangible but very real costs in suffering, permanent disabilities, loss of time and even death. From the humanitarian standpoint alone safe practices have appeared worth promotion.

The safety work has been undertaken through improvement in working conditions and in an educational campaign, both of which have been ably promoted by the Petroleum Safety Council of the Mid-Continent Oil & Gas Association.

Although a great many companies in the industry have been working ahead on the problem, in many instances the effort has not been uniform, even within a single company.

The recent work in the Skelly organization resulting from extended study by Mr. Swim and the operating executives is a notable step towards standardization.

Although the program is a comprehensive one and will take some little time to complete it is not considered the last word by the executives. New operating methods will bring out new methods and require modification of the standards.

Companies keeping accident statistics have learned that only a small proportion of the accidents are due to unguarded machinery or improper working conditions. But when these accidents do occur they are likely to be the most serious and expensive to the company. The Skelly standard of practice includes directions covering both the personal factors and the safeguarding of equipment.

Following is the Skelly bulletin to superintendents containing 26 standards:

"1. Consideration should be given to the obtaining of substantial foundations for derricks, taking into account the character of soil, to avoid settling and thus decrease the danger of pulling the rig in when it may be put in strain. In the case of old rigs the foundations and the rig itself should be examined by the foreman or superintendent before it is put to heavy use.

"Application: This applies equally to steel as well as wood derricks.

"2. On new wells, or in any case where cellars are used, if they are more than five feet deep, or if in cavey ground, they should be protected against caving by some appropriate means. Every cellar should have a runway or stairway at least three feet wide and unobstructed. In fields producing hydrogen sulfide gas each cellar should have two runways opposite each other so placed as to get advantage of the prevailing wind.

"3. Guy wires should be tightened by turnbuckles instead of nails and boards.

"Application: New installations.

"4. Gin poles should be two uprights notched for cross piece made of 2 by 12-inch or steel, with clearance of at least 7 feet.

"Application: New installations.

"5. On rotary derricks there should be an outside platform entirely around the rig at the fourble level, this platform to be at least 24 inches wide with a midrail 18 inches from the floor and a handrail 42 inches from the floor with a 6-inch toe board.

"Application: New installations.

"6. Each derrick should have a crows nest with the same railing and toe board as in Standard No. 5.

"Application: New installations.

"7. All inside platforms should be not less than three boards wide of either 2 by 10-inch or 2 by 12-inch securely bolted to derrick girts and finger board fastened to derrick with steel line and bolt to prevent falling of broken end in the event it is fouled.

"Application: All derricks both old and new.

"8. All men working on derrick platforms should be supplied and required to wear belts attached to life lines. These life lines should be a wire cable from leg to leg or on steel rigs it may be a ring on a girt. Lines from belts to derrick should have a snap on each end.

"Application: This applies to all men working on platforms above the derrick floor.

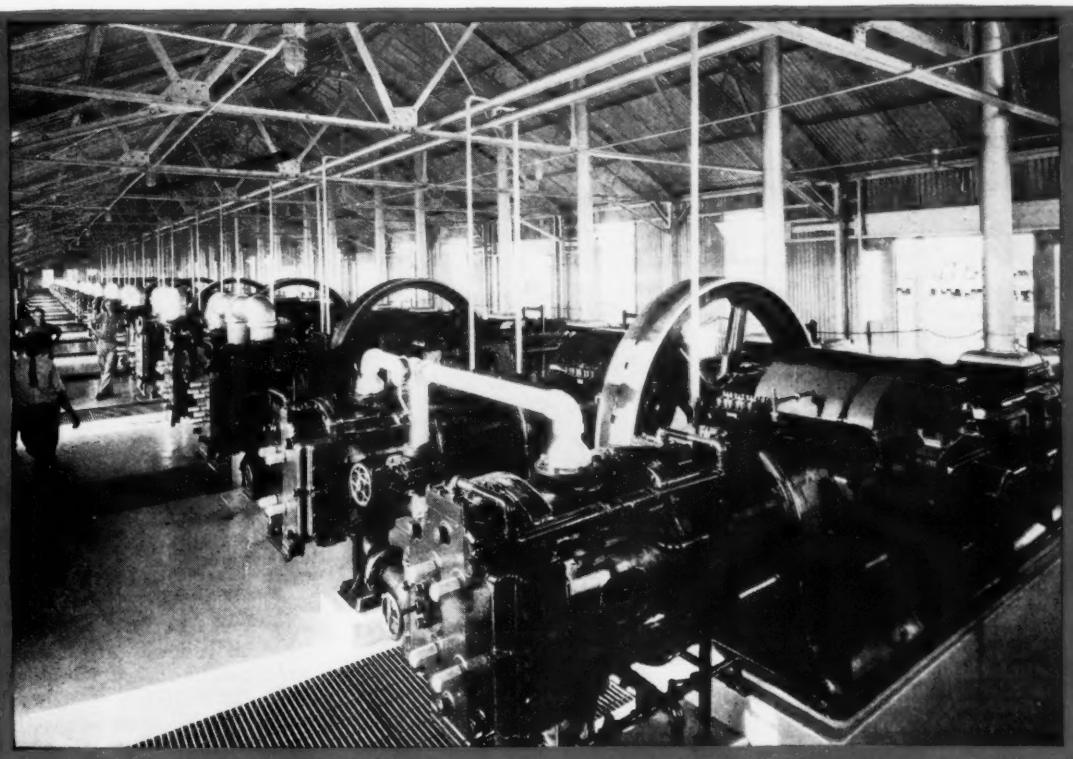
"9. Every rig should be equipped with a platform on the first girt below the crows nest consisting of two 2 by 10-inch or 2 by 12-inch, parallel with the crown block and bolted to girts.

"Application: All rigs where it is necessary to change lines.

"10. All ladders on wooden derricks should be guarded to prevent rungs pulling off and this may be done with

(*Continued on Page* 57)

*J. J. Moroney, independent operator, Okmulgee, Okla., is one of the pioneer producers of that district. Mr. Moroney was a newspaper publisher in Okmulgee before he entered the oil business*



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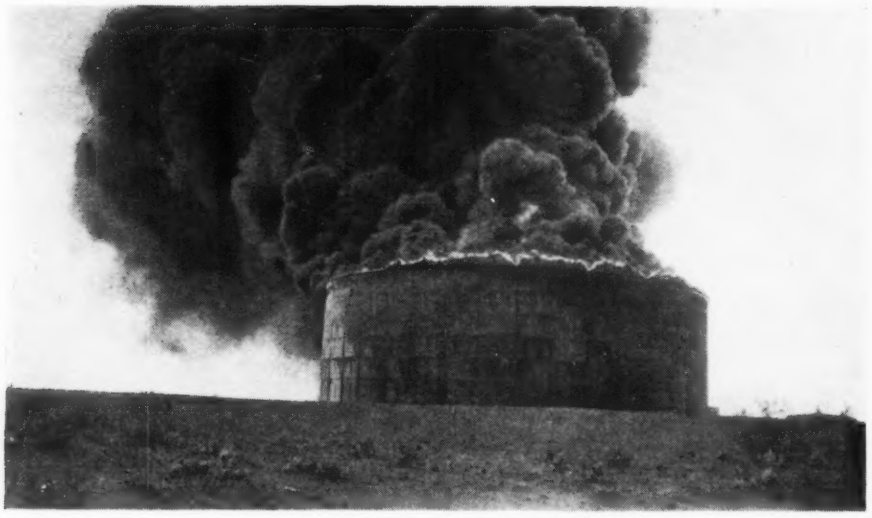


*Fire scene at Wickett, Texas, showing loss of wood roof steel storage tank of southern Crude Oil Purchasing Co. after lightning hit*

# Lightning Bolts Plague Tanks Of Magnolia at Midland

HOUSTON, Aug. 31

STATIC electricity manifests itself in so many peculiar ways that the "mystery of the Midland tank farm" is believed not to be entirely without its influence.

Having both positive and negative elements, static electricity is construed to be capable of attracting other phenomena in the form of lightning bolts.

Primarily the Midland mystery surrounds the question of why nine wood-roof steel storage tanks of the Magnolia Petroleum Co. have been struck by lightning, over a period of months, and scores of others in west Texas have not attracted similar bolts.

None of the tanks lost—eight of 80,000 barrels capacity each and one of 55,000 barrels capacity—had been equipped with lightning arresters. Significance seemed to attach to this fact. No gas-tight, steel-roof tanks in west Texas have ever been lost from fire caused by lightning.

In fact, lightning losses in the west Texas oil territory had amounted only to two or three individual tanks, at isolated points, prior to the electrical manifestations at the Magnolia's Midland tank farm.

Had all the losses occurred at one time attempt might have been made to explain the situation by definitely attributing the cause to wood-roof tanks and lack of lightning arresters. The solution of the question, however, is not that easily reached.

The Magnolia's losses, totaling roundly $1,000,000 for tanks and contents, came from three separate and distinct lightning hits over a few months. No losses were experienced on any of these occasions at the nearby tank farms of the Gulf Pipeline Co. and the Atlantic Oil Producing Co., which adjoin the Magnolia batteries, east of Midland.

Observers say that electrical manisfestations appear to follow a low surface ridge which extends through the Magnolia tank farm. The flatter area where the Gulf and Atlantic tank farms are located seems not to attract lightning.

It is now recalled that long before oil was discovered in west Texas and, therefore, before any of the Midland tank farms had been built, lightning bolts often hit along the ridge where the Magnolia storage was constructed.

Plainsmen, who make no attempts at technical deductions, see something more than coincidence in such things. They wonder whether some chemical content in the soil is responsible for direct attraction of lightning along the low ridge crossing the Magnolia tank farm. Others used to studying the earth's phenomena question whether such is the case or whether elements present in the area set up electrical potentials capable of attracting the lightning that accompanies west Texas thunder storms.

The whole of the west Texas plains area and the Panhandle region have long been recognized as "the home of static electricity" in the southwest.

Whatever the answer to the "mystery of the Midland tank farm" oil men in west Texas will watch with interest the results to come from installations of gas-tight tank tops and lightning arresters by the Magnolia.

Even though this equipment serves its intended purpose of avoiding lightning losses in the future there are those who will still seek the explanation of why the elements plague this particular tank farm and never score hits at the others nearby.

## Rotary Drilling Problems To Be Discussed

BARTLESVILLE, Okla., Aug. 31.—Rotary drilling problems will be discussed in a paper to be presented by R. S. Cartwright, of the Prunty Drilling Co. of Tonkawa, Okla., before the meeting of the American Institute of Mining and Metallurgical Engineers at Tulsa which immediately precedes the Fifth International Petroleum Exposition, there Oct. 20-29, A. W. Ambrose, chairman of the petroleum division of the A.I.M.M.E., announces.

The paper covers automatic drilling controls, which are coming more or less into general use. These drilling controls automatically regulate the amount of weight on the cutting tools.

The subject of mud-laden fluid is discussed in a somewhat different light than heretofore handled by many publications. One chapter deals with the distribution of time in rotary drilling with curves showing plats of effective drilling time at various depths and under varying conditions.

Another heading covers the relation of weight on the cutting tool to the cutting speed. The subject of weight indicators is also taken up at considerable length, bringing out the advantages of weight as well as recommending certain improvements.

Meeting also during the exposition are: the Mid-Continent Oil & Gas association, the 12 standing committees of the Natural Gasoline Association of America, the petroleum division of the National Safety Council, and the American Association of Petroleum Geologists.

## Tells Tale of Evolution Of Well Drilling Tools

Drilling of wells to find water is an art as old as the pyramids. Tools, crude and primitive but showing resemblance to the cable tools in use today, have been used for centuries for the purpose. Development of pumping equipment has evolved from the ancient sweep and bucket through the windlass stage, the chain of pots stage and the suction pump stage to the mechanism that is used today in deep oil wells.

The story of the development of the art of well drilling and pumping is interestingly told in an appendix to the Keystone Well Drillers Manual, put out in its seventeenth edition by the Keystone Driller Co., Beaver Falls, Pa. The driller's manual contains practical advice and suggestions for the driller using cable tools.

# Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

**The Texaco trade mark, which consists** of a "Red Star and Green T," saved two executives of The Texas Pipeline Co. from spending a night in the solitude of the Panhandle plains, recently.

A. M. Donoghue, vice president, of Houston, and O. R. Burden, Wichita Falls division superintendent, developed motor trouble while traveling from Wichita Falls to the town of Panhandle. They tried for an hour to make repairs at a point about 10 miles from Memphis. Few cars were on the road because of a heavy rainstorm that also added to the discomfiture of the Texaco men.

Relief appeared to be in sight when the headlights of a car were seen in the distance. As the car approached closer they stepped to the middle of the road, attempting to signal it. After whizzing past them the car was slowed down and finally brought to a stop. The occupants explained they had feared hi-jackers, but that the Texaco trademark had reassured them. Mr. Burden stayed with the car while Mr. Donoghue went into Memphis for towing service.

* * *

**John T. Cumbie of the land department** of the Magnolia Petroleum Co., Dallas, subsidiary of the Standard Oil Co. of New York, is now stationed at Denver, Colorado.

* * *

**B. R. Newberry, purchasing agent** of the Lone Star Gas Co., and president of the Purchasing Agents Association of Dallas, spent his vacation in Colorado in July.

* * *

**Five members of the American Association** of Petroleum Geologists have been appointed by Pres. R. S. McFarland of Tulsa to represent this organization on the American committee of the World Engineering congress at Tokio, Japan, in October, 1929. Appointees are Harry R. Johnson, consulting geologist, Los Angeles, chairman; E. DeGolyer, president, Amerada Corp., New York City; Charles J. Hares, Ohio Oil Co., Findlay, Ohio, and Los Angeles; Fred H. Kay, Pan American group companies, New York City; C. R. McCollum, Prairie Oil & Gas Co., Los Angeles.

* * *

**B. E. Parrish, resident manager at** Ebano for the Marland subsidiaries in Mexico, has returned home after a business trip to headquarters of the parent company at Ponca City.

* * *

**H. R. Neal, formerly hotel superintendent** for the Huasteca Petroleum Co., in the Tampico district of Mexico, now holds a similar position with the Lago Petroleum Co., also of the Pan American group, at Maracaibo, Venezuela.

# Standardization of Safety Practice

(*Continued from Page* 52)

either wire or boards nailed over the ladder rungs.

"Application: All wooden derricks.

"11. Equip all wells so that bull wheel guards may be used and provided these guards as part of the equipment of all drilling, cleanout and pulling crews. For illustration of this guard and its use please refer to page 71, Bulletin 272, put out by the Bureau of Mines.

"Application: All new installations and or such old installations as use bull wheels and ropes for pulling rods or tubing and cleaning out.

"12. All front sides and reels should be guarded. Where the sand reel is on the back side and there is a walkway, a railing guard should be provided from the engine house past the band wheel.

"Application. This to apply only to new installations or when the sand reel is used for cleaning out on old wells.

"13. A stairway should be provided from derrick floor to belt house roof as shown on page 94, Bulletin 272, Bureau of Mines.

"Application: New installations only.

"14. Provide hand rail on derrick end of walking beam as illustrated page 95, Bulletin 272, Bureau of Mines.

"Application: All new installations and on those wells pumping with a beam.

"15. Provide ladder with one railing from belt house roof to girt at top of walking beam on installations with low belt house at derrick as indicated on page 96, Bulletin 272, U. S. Bureau of Mines.

"Application: New installations only.

"16. All keys on steam engines should be cut off flush or provided with thimble. Each superintendent should also endeavor to convince drilling contractors on wells in his district to so equip their engines.

"Application: All engines with projecting keys, particularly steam engines.

"17. All wetometers should be discarded and all gas regulators should be vented to the outside of engine house.

"Application: All locations where this condition applies.

"18. Every beam hanger should be taken down whenever rods are pulled, to prevent falling on being fouled. Each foreman or man in charge of pulling crew should be cautioned that this is his responsibility.

"Application: Every location where beam hangers are used.

"19. Every well pumping from a power should be provided with a safety knockoff block and safety hook and the C type of hook is suggested to gradually replace the old double hook.

"Application: All properties should be eventually brought to this standard.

"20. Unless a patented safety hook is used, all elevator links should be chained to the hook. Some person should be charged with the responsibility of frequently examining these hooks to determine if they are still safe to use without chains.

"21. All traveling blocks not of the new safety type should be equipped with safety housing.

"Application: New traveling block purchased will be of safety type and all of the old ones in use should be provided with this safety housing.

"22. Provide a stairway and walkway with hand rails at each tank or tank battery so that gauging may be done from walkway. Where valves cannot be opened from walkway you should have a socket wrench made so that these may be opened and closed from this walkway.

"Application: All tank batteries.

"23. The oiling equipment on band wheels at powers should be kept in order so that these powers may be oiled from the outside of the wheels.

"Application: All powers.

"24. Metal guards should be provided for all open gears such as on water pumps.

"Application: All such equipment without exception should be so guarded.

"25. Provide all gas pumping engines with air intake lines which are extended to the outside of engine house.

"Application: Both old and new engines should be so equipped.

"26. In all cases and especially on new leases safe ladders should be provided in connection with flow tanks or settling tanks rather than the common practice of using a single board with cleats."

# Trend of The Times

By Lawrence E. Smith

National Petroleum News

## Contract to Tube High Pressure Wells

THE tubing of high pressure oil wells, to enable a better control of gas oil ratios, is an object sought by many production men. Various attempts have been made, some successful, but uniform methods and equipment for accomplishing this purpose have been lacking.

Now a company has been organized in Shreveport to undertake such jobs on a turn-key basis. The Southern States Co., Ardis Building, composed of men of extensive experience in high pressure gas fields and fields where oil wells frequently come in under high pressure, is ready to tackle anything up to 1000 pounds pressure and they believe they will be able to run tubing in wells of even higher pressures.

Heretofore oil wells with high pressure gas have had to be flowed wide open until the pressure declined to the point where it was inferior to the weight of tubing. This company has developed equipment consisting of a snubbing device, to force the tubing into the well against gas of high pressure. Details of this snubber are not yet revealed because of patent status. Another device, made up on the bottom joint of the tubing, keeps the string closed until it is landed and the operator is ready to permit production to start. Then a valve in the foot piece is broken open.

In tubing a well, this company uses two control heads of well known type, mounted one above the other. With the foot piece made up on the tubing, it is started into the hole through the control heads. The top head is opened to permit the tubing collar to pass through while the bottom one remains closed. With the collar past the top head, the latter is closed and the lower head opened until the collar is through that one. This alternately closing and opening the control heads is kept up until the entire string is run. To facilitate the operation of opening and closing the ram in the control head, which in the type used is screw actuated, by-passes were set in to equalize the pressure on each side of the rams.

Working the snubber against the gas pressure, tubing is forced into the well rapidly and without important loss of gas, kept under control by the heads and by the foot piece on the tubing. Two "snubs" or hitches to each joint of tubing on a well of say 800 pounds pressure are about the average.

A recent job completed by this company was on a well with 525 pounds working pressure. A string of two-inch upset tubing was run in without loss of more than a quarter million feet of gas. Another tubing job of greater interest was that planned on a well 4,400 feet deep with pressure of 750 pounds and gauge volume of 35 million feet. This well was spraying a little water and the owners wanted it tubed to keep back water. The Southern States company officials believed the job could be done in about six days time.

## Cooperative Attempt To Use Gas Energy

THE cooperative agreement entered into by several companies in the Vernon field of Kay county, Okla., brought to light an earlier agreement made by the same operators on well spacing.

Some discussion was given in the columns of NATIONAL PETROLEUM NEWS several months ago on the subject of economic spacing of wells in deep territory. The idea was advanced that, purely in the interest of reduction of development costs, a modification of the present standard practice of drilling one well to 10 acres might feasibly be made. That program was set up before the days of 4000 and 5000-foot development when wells cost half or less than half as much to drill.

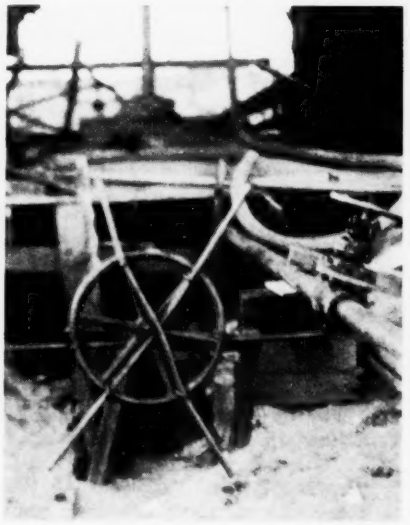
The Vernon field is in Twp. 29N-1E. Wilcox sand is found at around 3300 feet. Operators some time ago, when by reason of lease requirements some drilling had to be undertaken, agreed to a program of three wells to each 80 acres, or six to the 160. Compared to the general practice in Mid-Continent fields, this is a reduction of 10 wells to each 160 acres.

It is provided that twin wells may be drilled to produce from horizons higher than the Wilcox sand, if operators so desire. The companies in this agreement are the Carter Oil Co., Marland Production Co., Shaffer Oil & Refining Co., Tidal Oil Co., Amerada Petroleum Corp. and Ona Oil Co.

Supplementing the spacing agreement, the same companies have agreed to restriction of production in this pool. All wells that are necessary to meet offset requirements and to take care of leases soon to expire will be drilled. As soon as the first of the present number that is being drilled is completed as a producer, the Tidal Oil Co. will shut in its Wilcox discovery well to 300 barrels per day and those now drilling will be held to the same amount for such time as it takes to complete the next crop of offsets. Then the operators will meet again and determine the best method to adopt to conserve the gas energy of the pool.

The industry is, therefore, to see an example not only of modification of well spacing to fit the cost of drilling but a cooperative attempt at utilizing gas energy to best advantage. The experiment is an interesting one in a number of ways.

## Workers Protected by Gate Valve Control



HOUSTON, Aug. 31.—Field workers find it unnecessary to expose themselves to hydrogen sulfide gas in closing the plate valve on a well equipped like the one shown in the accompanying picture. In case of fire also, the gate valve may be closed without entering the cellar underneath the derrick.

The picture shows the outer end of a piece of 3-inch pipe, which is connected to the gate valve control by means of four prongs made by splitting it at one end. The prongs are fastened tightly to the control. At the outer end, as shown in the picture, a wheel and additional grips made of small pipe provide means for turning the valve control quickly. The connecting stem of pipe may be of any necessary length up to about 150 feet.

Many operators in the Permian age salt basin region of west Texas and southeastern New Mexico use similar precautionary devices. The picture was taken at the Eaves gas well of the Marland Production Co., north of the Texas boundary in Lea county, New Mexico.

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| All Steel Standard Rigs | ■ | Rotary Steel Line Drilling Equipment | ■ |

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# INDEX TO ARTICLES

## Selected Bibliography on Petroleum Technology

*Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. The "Decimal Index of Petroleum Technology" gives the key to the articles. This book is published exclusively by NATIONAL PETROLEUM NEWS as a service to its readers. Price $1.00. Abstracts started April 4, 1928.*

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**S. T. Minchin and G. R. Nixon** **720.2**

**"Examination of Petroleum Distillates from Various Sources"**

**Journal, Institution of Petroleum Technologists, June, 1928, pp. 477-492.**

Part 1, the preparation of a standard motor spirit and a standard kerosene.

"For the preparation of a standard motor spirit and kerosene our initial experiments have been directed to the cracking of high melting point refined paraffin wax from Burmah crude.

"This wax so far as analysis shows, was practically pure paraffin and contained only a small percentage of oil. The effect of cracking was to form a product from which motor spirit and kerosene could be obtained. This product, according to the method of cracking might contain some or all four of the main classes of hydrocarbons. It is certain that whatever the method of cracking, the paraffin and unsaturate classes will be represented. The aromatic class will be present if the method is one in which high temperatures (and pressures) are used. Naphthenes are produced to a greater or less extent in those methods which tend to the formation of members of the aromatic class.

"Unsaturated and paraffin hydrocarbons predominate when the method employs lower temperatures (and pressures) and the decomposition products are removed shortly after they are formed, as in "pressure distillation". It is very uncertain whether naphthenes are formed from paraffin wax in this latter method of cracking, the only possible way being the secondary reaction of cyclic condensation of small unsaturated molecular fragments produced by decomposition of the large molecules comprising the paraffin wax. If the cracked products are removed as fast as they are formed, the production of naphthenes will tend to a minimum. Experimental results show that practically no members of the aromatic class are produced by this method of cracking so that the effect of a pressure distillation on paraffin wax at moderate temperaure and pressure gives a product containing chiefly unsaturates and paraffins and possibly naphthenes."

**773.1**

**"Automatic Control and Easy Maintenance Feature New Gasoline Plant"**

**National Petroleum News, June 27, 1928, pp. 22-23.**

The Gilmore Oil Co. gasoline plant recently built in the Long Beach Field has been so thoroughly equipped with control devices that the operator has little to do but watch the gauges and fill out log sheets. Control devices utilized are described as well as specially designed equipment built by J. A. Campbell.

**National Petroleum News** **747.**

**"How Important Petroleum Tests Are Applied and What They Show"**

**National Petroleum News, July 4, 1928, pp. 60-63.**

The first installment of a booklet put out by Committee D-2 of the American Society for Testing Materials on "Application of Tests", designed to clarify in the minds of members of the oil industry the purpose of the various tests now in use for determining the characteristics and qualities of oil products and to state authoritatively what these tests show and mean and what they do not.

**Chatfield, J. C.** **740.**

**"Fifteen Men Are Full Operating Crew of 8000-Barrel Refinery"**

**National Petroleum News, July 4, 1928, pp. 28-30.**

Entire distillation system could be operated by one man because of plant design which has placed in one control house all controls of firing, crude charging, liquid transfer and reflux. Treating plant centralized so one man can treat 3000 barrels of gasoline on a shift. No steam used except for heating. Centrifugal and rotary pumps direct connected to electric motors used for all pumping. Salts eliminated to such an extent before crude enters distilling system that no hydrochloric acid corrosion is observed, although the charging stock is Hutchinson county crude which has a high salt content.

Salt removal accomplished by pumping into two insulated tanks each fitted with a coil running lengthwise through the center. Hot fuel oil pumped through coils on its way to storage. Crude is jetted against the hot tube bank, causing water to evaporate and salts to drop to bottom in crystalline form.

**Paul Runge** **741.3**

**"How Trouble Can Be Avoided in Running Ordinary Batch Still Battery"**

**National Petroleum News, July 11, 1928, pp. 69-76.**

Author describes good methods of operating a shell still battery. He describes a system for charging the stills and starting them up, temperatures at which cuts should be made for various products, methods of pumping out and cleaning out and various other data on still operation including amounts of steam used in distilling various products, from the standpoint of the experienced refinery operating man.

## J. C. Geniesse and H. F. Huf — 801.

### "Effect of Volatility of Petroleum Fractions on Detonation Value"

**Industrial & Engineering Chemistry, August, 1928, pp. 794-795.**

Detonation tests were made in the single-cylinder Lockwood-Ash motor modified by the substitution of a dynamometer for the Prony brake, on five naphthas: A straight-run Pennsylvania naphtha; a straight-run Mid-Continent naphtha; a straight-run California naphtha; a liquid phase cracked distillate made from Mid-Continent gas oil and a liquid phase cracked distillate made from a selected gas oil.

The procedure used was to gradually open throttle, keeping speed and spark advance constant, until audible detonation took place. A straight-run Mid-Continent gasoline of U. S. Motor specifications was used as a reference fuel. Relative detonation values are given in a table. Following conclusion is stated:

"There is a definite relationship between specific gravity of a fraction from a given crude and its detonation value, and also between the 50 per cent (including loss) distillation temperature of a fraction from a given crude and its detonation value. A graph constructed from these data makes it possible to predict what effect changing the volatility will have on the detonation value."

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## Paul Truesdell — 724.

### "Distillate is Its Own Induction Pump in Continuous Treating System"

**National Petroleum News, Aug. 22, 1928, pp. 65-68.**

A simple treating system is described which consists of three vertical tanks, three venturi mixers and one pump. It is used for desulfurizing vapor phase cracked distillate. Treating agents are caustic soda, hypochlorite and a water wash.

System is mathematically figured so that distillate being pumped through venturi mixer draws in just enough caustic soda to accomplish the desired result, so that the whole of the treating agent settles out as the liquid rises to the overflow outlet in the top of the tank. Same system is followed in treating in the second tank with hypo, mixing is done in a venturi and the reagent settles out in the tank. In the third tank a water wash is applied in the same way, inflow of water being governed by a liquid level control. Process can be used either batch, semi-continuous or continuous.

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## J. A. Carpenter — 720.2

### "Composition of Petroleum (kerosene and other) Fractions"

**Journal Institution of Petroleum Technologists, June, 1928, pp. 446-476.**

This paper is Part III of a discussion. It covers applications of the aniline point, specific gravity and refractive index tests, with properties of individual hydrocarbons. The author says the work, incompletely developed, shows several points of interest. The sections into which the work falls are: The properties of aniline points; methods for isolation of paraffins from fractions and, where possible, naphthenes and aromatics; partitions in aniline-oil system. Examination of early fractions of Burmah crude and the identification of individual paraffins and naphthenes. Examination of cracked Burmah wax; properties of paraffins (aniline points and other constants); properties of aromatics (aniline points and other constants); properties of naphthenes (aniline points and other constants); properties of unsaturateds (aniline points and other constants); correlation of the properties of 125-300-degree C. fractions from certain crudes (aniline points, specific gravity and refractive indices); rules for the determination of various classes of hydrocarbons in petroleum kerosene ranges; general notes on the application of aniline point tests. The error introduced by the use of impure or wet aniline is too great to neglect.

---

## Oscar C. Bridgeman — 801.

### "New Points of Air-Gasoline Mixtures from Distillation Curves"

**Industrial & Engineering Chemistry, August, 1928, pp. 821-826.**

Gasoline was vaporized by a dynamic method in the presence of known amounts of air at temperatures permitting successive approach to complete vaporization. For each mixture and gasoline the temperature-percentage evaporated curve extrapolated to 100 per cent gave the dew point temperature. Thes equilibrium distillation values agreed well with values obtained by the method of Stevenson and Babor and with the results of these investigators. The dew point temperatures at 1 atmosphere, of gasoline vapor, and of mixtures from 1:1 to 30:1 were found to be simply related to the 90 per cent A. S. T. M. points, corrected for loss, and to each other.

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## Henry W. Ralph — 749.

### "Accounting Methods for Refineries"

**National Petroleum News, Aug. 15, 1928, pp. 28-30.**

Article 2 of a series. The author goes into the proper methods of determining costs of products. "Crude petroleum", says the author, "is broken down in the manufacturing processes into several products and the total costs of the raw materials, supplies, labor and so forth can be precisely determined. The sum of these represents the cost of all products. All that we know definitely about the cost of any single product is that it consists of the items of cost which are peculiar to that particular product and that its cost added to the cost of all the other products must equal the total cost."

---

## H. S. Rowell and D. Finlayson — 830.1

### "Experiments in Viscometry"

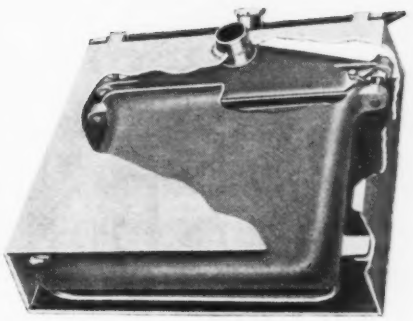
**Journal Institute of Petroleum Technologists, June, 1928, pp. 403-433.**

Based on reports issued during past five years to members of two research associations.

"In the study of carburation which is essentially the precise measurement of minute quantities of volatile fuel induced to flow by a stream of air, viscosity and density as dependent on temperature are obviously of the first importance. From the results obtained in this work it appears possible that viscometry combined with densimetry may be an effective instrument in the analysis or identification of complex carburants.

"Lubrication, as is well known and now obvious, is greatly dependent on the viscosity of the lubricant. And since in much modern machinery, conspicuously the millions of automobiles in daily use all over the world, lubrication of hot surfaces is necessary it is important to know how the viscosities of lubricants vary with temperature. When this work began very little reliable information was available on the viscosities of oils at temperatures much above 100 degrees C. and, perhaps more regrettable, no sure method of extrapolating existing information to high temperatures could be found.

"Efforts were therefore made to obtain data on these two points. In the course of the work it apeared that the usual viscosity curve is geometrically very ill-conditioned and therefore an attempt was made to devise a suitable characteristic curve for lubricants; this is offered more as a preliminary suggestion for discussion than as a completed recommendation."

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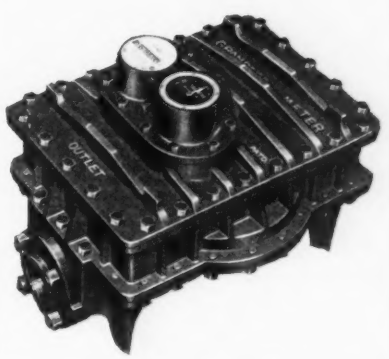


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# Accounting Methods for Refineries

*Article Five*

## Means to Control Stocks In Manufacturing Process

By Henry W. Ralph

AS THE title "stock control" implies, this article has to do with the records which show that those articles of value which comprise the stock in trade are under the control of responsible individuals and are properly "accounted for".

*HENRY W. RALPH*

This function is essential to management since the process of manufacturing and sometimes the process of storing and selling is productive of a loss of some kind, whether it be the waste of a raw material, which is not fully utilized, or whether it be the actual disappearance of some part of the raw material, "in process" products, or of the finished products. Without a precise knowledge of losses of this kind it would be impossible to plan future operations successfully.

As stated in a preceding article "regardless of the size of the refinery and the complexity of its operations it is good practice to have a single sheet of paper on which all of the operations for the period may be summarized."

Fig. 1 illustrates a stock statement which can with sufficient elaboration be used by almost any organization manufacturing petroleum products. There is nothing unusual about this set-up, and it may be no better than the statement already in use by some organizations. It has purposely been kept simple so that the explanation covering its use would not become too complicated. It will require considerable amplification for use by any refinery. Its value will lie in the fact that it illustrates a method of setting up on one piece of paper the facts which summarize operations so that it constitutes a complete proof that stock in trade of the organization has been properly accounted for; also because yields, stock losses, and manufacturing losses are immediately apparent and are presented not only quantitatively but as ratios.

In the actual operation of a refinery it is likely that crude will be purchased from several sources and there may be several grades supplied by company units. Even a small refinery will have more than one type of still and many different processes for improving the quality of finished products. It is often the practice to combine the distillate obtained from different sources to obtain charging stock for cracking.

No attempt has been made to show

(Quantities in Gallons)

### SUMMARY OF OPERATIONS

Period ending 19

| | Crude No. 1 | % | Crude No. 2 | % | Casinghead Gasoline | % | Benzine | % | Gasoline | % | Fuel Oil | % | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Opening inventory—Actual | 100,000 | | 150,000 | | 5,000 | | 6,000 | | 50,000 | | 200,000 | | 511,000 |
| Receipts—Outside purchases | | | 70,000 | | 2,000 | | | | | | | | 72,000 |
| Receipts—Company Units | 50,000 | | | | | | | | | | | | 50,000 |
| Transfers a c charging, etc. | | | | | | | | | | | | | |
| Prod'n & Mfg. loss—Still Type 1 | (1,000) | 1.67 | | | | | 24,000 | 40.0 | | | 35,000 | 58.2 | 59,000 |
| Prod'n & Mfg. loss—Still Type 2 | | | (3,000) | 2.0 | | | | | 75,000 | 50.0 | 72,000 | 48.0 | 147,000 |
| Prod'n & Mfg. loss—Process 1 | | | | | (45) | 1.5 | | | 2,955 | 98.5 | | | 2,955 |
| Prod'n & Mfg. loss—Process 2 | | | | | | | (100) | 2.5 | 3,900 | 97.5 | | | 3,900 |
| Total Mfg. Losses | | | | | | | | | | | | | (4,145) |
| Total—to be accounted for | 149,000 | | 217,000 | | 6,955 | | 29,900 | | 131,855 | | 307,000 | | 841,710 |
| Shipments—Sales | | | | | | | | | 80,000 | | 157,000 | | 237,000 |
| Shipments—Transfers | | | | | | | | | | | | | |
| Transfers a c charging, etc. | | | | | | | | | | | | | |
| Consumed—Still Type 1 | 60,000 | | | | | | | | | | | | 60,000 |
| Consumed—Still Type 2 | | | 150,000 | | | | | | | | | | 150,000 |
| Transfer—Process 1 | | | | | 3,000 | | | | | | | | 3,000 |
| Transfer—Process 2 | | | | | | | 4,000 | | | | | | 4,000 |
| Total shipped, consumed, etc. | 60,000 | | 150,000 | | 3,000 | | 4,000 | | 80,000 | | 157,000 | | 454,000 |
| Closing Inventory—Actual | 87,000 | | 68,000 | | 3,905 | | 25,900 | | 51,000 | | 150,000 | | 385,805 |
| Total Accounted for | 147,000 | | 218,000 | | 6,905 | | 29,900 | | 131,000 | | 307,000 | | 839,805 |
| Balance—Stock gain or loss (red) | (2,000) | 1.33 | 1,000 | .5 | (50) | 1.3 | | | (855) | .52 | | | (1,905) |

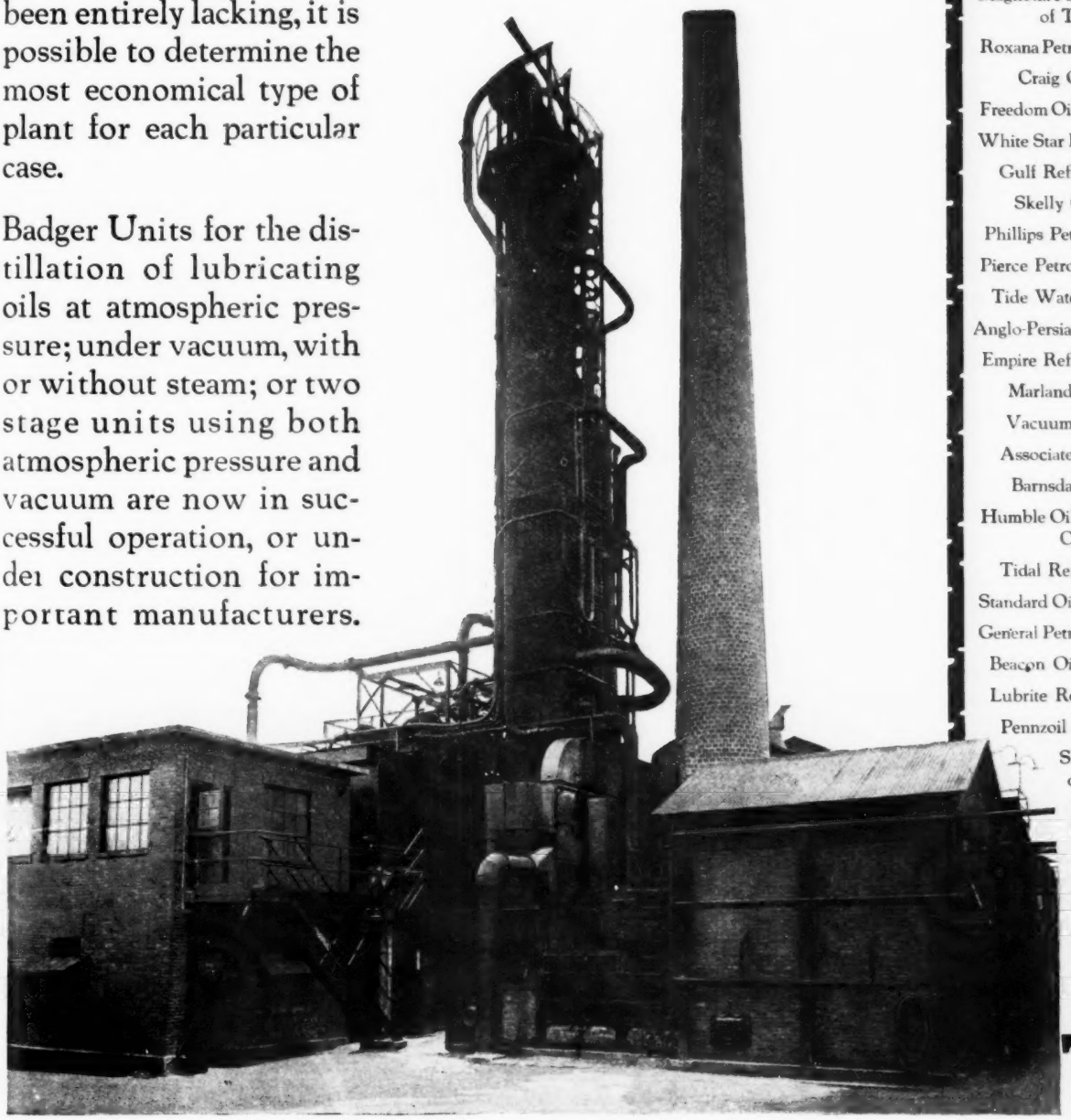
Circled figures indicate red figures

*Fig. 1.—Sample sheet of Summary of Operations*

# BADGER UNITS FOR LUBRICATING OILS

The design of Badger Units for the distillation of lubricating oils is based on the most complete laboratory and small scale work in which the amount of lubricating stock in the material to be distilled is first accurately determined. With such data, which has hitherto been entirely lacking, it is possible to determine the most economical type of plant for each particular case.

Badger Units for the distillation of lubricating oils at atmospheric pressure; under vacuum, with or without steam; or two stage units using both atmospheric pressure and vacuum are now in successful operation, or under construction for important manufacturers.



*The following Companies are some of those who have purchased BADGER Equipment:*

Magnolia Petroleum Co., of Texas
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Craig Oil Co.
Freedom Oil Works Co.
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Gulf Refining Co.
Skelly Oil Co.
Phillips Petroleum Co.
Pierce Petroleum Corp.
Tide Water Oil Co.
Anglo-PersianOilCo.,Ltd.
Empire Refineries, Inc.
Marland Oil Co.
Vacuum Oil Co.
Associated Oil Co.
Barnsdall Corp.
Humble Oil & Refining Co.
Tidal Refining Co.
Standard Oil Co. of N. J.
General Petroleum Corp.
Beacon Oil Company
Lubrite Refining Co.
Pennzoil Company
ShellCompany of California
New Orleans Refining Co.
Emlenton Refining Co.
Independent Refining Co.
Richfield Oil Co.

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a typical Summary of Operations for even the most simple refinery. The subject matter which follows is simply an illustration, reduced to the simplest terms possible, of the method of presenting on a single piece of paper a proof of satisfactory "Accounting For" the stock in trade of a refinery, and to suggest methods for developing valuable information which otherwise might seem difficult to obtain.

It will be noted that on this form, Summary of Operations, figures have been entered to show some theoretical transactions. The figures entered have been selected from the standpoint of ease of calculation and are used only to reduce to the minimum the text required for explanation.

The assumptions made in connection with Fig. 1 are:

1. An actual inventory was taken at the beginning of the period and also at the close of the period. The results of these inventories are entered on the corresponding lines of Fig. 1.

2. Two types of crude are being received, No. 1 crude coming in from company units, and No. 2 crude being purchased outside. The quantities received are shown on appropriate lines.

3. Sixty thousand gallons of crude No. 1 are being run in Type 1 still with the production of an unmeasured quantity of benzine and 35,000 gallons of fuel oil.

4. There are 150,000 gallons of No. 2 crude being run in Type 2 still to fuel oil with a production of 75,000 gallons of gasoline. There are no facilities for measuring the quantity of fuel oil produced in Type 2 still.

5. Receipts of casing head gasoline amounted to 2,000 gallons and 3,000 of these combined in process No. 1 to produce marketable gasoline but there is no method of measuring the precise quantity of gasoline used for this purpose or the total quantity produced of this blended gasoline. Normal shrinkage in this process is 1½ per cent.

6. An unknown quantity of benzine was converted by process No. 2 into commercial gasoline with a production of 3,900 gallons. The standard loss in this process is 2½ per cent.

It is not possible to complete the accounting for quantities of crude No. 1 because the amount of manufacturing loss in Type 1 still is unknown; nor is it possible to complete the accounting for crude No. 2 because the amount of manufacturing loss in Type 2 still is unknown.

## Type 1 Still—Facts Incomplete

The measurement of crude storage tanks gave facts which enabled us to calculate the quantity of crude pumped to these stills, 60,000 gallons. From the measurement of fuel oil run-down tanks it was possible to calculate the production of fuel oil, 35,000 gallons, so that we know that the production of benzine added to the manufacturing loss amounted to 25,000 gallons. If either one was known we could calculate the other.

There are not sufficient facts to complete the summary of operations unless we make some assumptions. Because the quantities are relatively so much smaller we will assume that there has been no stock loss in benzine—although we could of course make the assumption that there had been no stock loss in Crude No. 1 and develop by means of a simple calculation a theoretical manufacturing loss of 3000 gallons.

## Process 2

We know that Process No. 2 resulted in the production of 3900 gallons of gasoline and that the standard manufacturing loss in this process is 2½ per cent. If the yield was 97½ per cent and the production 3900, then the quantity used must have been 4000 gallons and the processing loss 100 gallons.

## Benzine

These facts together with the assumption that there has been no stock loss or gain in benzine enable us to make the following calculation. The closing inventory and the transfer to processing plant No. 2 account for 25,900 gallons. The opening inventory was 6000 gallons and there has been suffered a processing loss of 100 gallons so that we have a total to be accounted for of only 5900 gallons. Therefore the difference between the 25,900 and the 5900 must have been due to the production from Type 1 still. The difference, 24,000, is therefore entered as production of benzine from Still Type 1.

## Type 1 Still—Data Completed

The production of 24,000 gallons of gasoline, added to the fuel oil production of 25,000 accounts for a total production of 59,000 gallons from Type 1 Still. The difference between this total and the consumption of crude No. 1 represents the manufacturing loss. We enter this difference, 1000 gallons, on the appropriate line in the column for Crude No. 1. It is now possible to complete the calculation of quantities in this column.

## Crude No. 1

The opening inventory of 100,000, added to the receipt of 50,000, less the manufacturing loss resulting from the distillation of 60,000 gallons in Type 1 still of 1000 gallons, gives a total of 149,000 gallons to be accounted for. The 60,000 consumed, added to the closing inventory of 87,000 gallons, account for a total of 147,000 gallons. The difference between the 149,000 and the 147,000 leaves a balance of 2000 gallons which is a stock loss and is entered in red on the sheet. The manufacturing loss of 1000 has also been entered in red.

## Type 2 Still—Facts Incomplete

As previously stated, we have only partial information covering this process since the only facts we know about the operation are the consumption of crude and the production of gasoline. It is necessary to make the assumption that there has been no stock gain or loss either in the Fuel Oil or in Crude No. 2. We prefer to make the assumption for Fuel Oil.

## Fuel Oil

A total of shipments 157,000 and closing inventory 150,000 accounts for 307,000; and since there was an opening inventory of 200,000, and a production from Type 1 still of 35,000, the difference between the 307,000 and the total of these two, 235,000, must have been the production from Type 2 still, and this amount, 72,000, is entered as production of fuel oil from Type 2 still.

## Type 2 Still—Data Completed

If the production of fuel oil was 72,000 gallons, and of gasoline 75,000 gallons, the difference between their total, 147,000, and the crude consumed, 150,000, must have been the manufacturing loss in Type 2 still. This difference, 3,000, is entered in the column for Crude No. 2 on the appropriate line.

## Crude No. 2

For Crude No. 2 the calculation is similar to that of Crude No. 1. Opening inventory 150,000, added to receipts 70,000, less manufacturing loss, 3,000, gives a total of 217,000 to be accounted for. The crude consumed, 150,000, added to closing inventory, 68,000, accounts for a total of 218,000. The difference between the two, 1000 gallons, is a stock gain and is entered in black on the last line.

## Casinghead Gasoline and Process 2

The use of 3000 gallons of casinghead on the basis of a loss of 1½ per cent gives a processing loss of 45 gallons, and a production of gasoline of 2955 gallons. An opening inventory of 5000 combined with receipts of 2000, less a processing loss of 45 (entered in red) gives a total to be accounted for of 6955. Since the transfer for processing, 3,000, combined with the closing inventory of 3905 accounts for only 6905 gallons there is developed a stock loss of 50 gallons which is entered in red on the appropriate line.

## Gasoline

The opening inventory of 50,000, combined with the production from Type 2 still of 75,000, the production from Process 1 of 2955, the production from Process 2 of 3900 give a total to be accounted for of 131,855. The shipments, 80,000, added to the closing inventory 51,000 account for a total of 131,000. The difference represents a stock loss, 855 gallons, which is entered in red in the appropriate place.

## Total Column

This column is provided merely as

an arithmetical accuracy check. The total to be entered on each line will not, however, be the net total of all the items on the line but the sum of all items on the line except the manufacturing loss. The sum of all the manufacturing losses (shown in red on each line) will be entered in the Total column on the line Total Mfg. Losses.

For the last line, Balance—Stock Gain or Loss (red), the amount to be entered in the Total column will be the net sum of all the black and red figures on this line.

### Per Cent—Ratios

Such ratios as seem significant to the management will be entered in these spaces—particularly the manufacturing losses, the yields, and stock gains and losses.

### Comment

It may appear that the method of developing the facts which appear on this Summary of Operations is extremely complicated and some other arrangement will render the computation less burdensome. This is quite possible but the function of the complete report is far more important than the amount of clerical effort necessary for its production.

This report should present the important and significant facts concerning quantities of the refinery's stock in trade. If a more complete and more simply understood statement can be developed it should be substituted for this one. It must automatically demonstrate that stocks have been accounted for and set out clearly the yields and the various types of losses.

As is illustrated in the preceding discussion it is often necessary to make assumptions that are not entirely true in the process of completing the report, even in the refineries best equipped with measuring devices. In refineries less completely equipped it is necessary to make many assumptions, and it is essential that those assumptions be made which will lead to the minimum errors. In many refineries with an insufficient number of separate run-down tanks, it will be found necessary to use yield figures that are based on long experience and thus develop a close approximation of the facts.

Many plants, particularly the older ones, are definitely lacking in facilities which will enable them to keep currently posted on yields, and so improve control of their operations. For such plants it will be well to make an analysis to determine the point at which the minimum expenditure for new equipment will give the maximum of significant facts. In making such an analysis a presentation of the facts of operation in this form will be found of considerable help.

### Codified Routine Necessary

It will be found necessary to follow a definite procedure in the making of these summaries. Each refinery must be guided by its own facilities and previous experience but it is desirable for each plant that the routine be the same from week to week, or month to month. In all cases the main facts must agree with other records. The inventories must agree with the physical facts, the total shipments must agree with the shipping record totals and the total purchases must agree with the purchase records. If the routine for developing facts is changed from period to period the facts that must be kept in mind when considering the results of manufacturing operations—yields and losses—become more complicated and erroneous conclusions are likely to be drawn.

### Changes Required

To elaborate this report for use by a particular refinery it will be necessary to add an additional column for each additional important product and for each additional class of the less important products. For each additional process or type of still it will be necessary to add two additional lines: one for recording Production and Manufacturing Loss, and the other for recording Consumption or Transfers.

Any reasonably complete refinery will ship a long line of blended products and develop in its shipping records appropriate totals. Each of these will be relatively unimportant from the standpoint of gallonage, but in the summary of operations it is essential that they be not overlooked. The obvious solution is to make a separate sheet or sheets on which each product will be allotted a column, and the total column of that sheet will correspond to a separate column on the main Summary of Operations.

Each of these subordinate sheets will be similar in general construction to the main sheet but there will be only as many lines required as are needed for entering the quantities transferred and the processing operations that affect the products which are reported on that particular sheet.

It will be found that sheets of the type shown in Fig. 1 are valuable in developing the basic information necessary for whatever system of cost accounting that is in use.

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The Charles T. Topping Machinery Co., manufacturer of excavating machinery for oil and gas pipe line, has removed its offices from Dayton to 4403 St. Clair ave., Cleveland, O.

---

Columbian Steel Tank Co., Kansas City, Mo., has on the market an attachable expansion filling dome for truck tanks, not originally provided with expansion domes. These domes have a capacity of 1¼ gallons with standard threaded connection to fit into 6 inch fill nipple, and with bushing can be made to fit any smaller size opening. This indispensable feature in truck tanks not only takes care of expansion but provides for shell full loads without danger of slopping sides of the tank.

# Ethyl Gasoline Corp. Sues Ethylene Co.

CLEVELAND, Sept. 3.—The Ethyl Gasoline Corp. of New York City has brought two suits against three defendants, two in Wisconsin and one in Ohio, seeking to enjoin them from using the words "Ethylene" in connection with the sale of gasoline and from using a trade mark that is claimed to be an infringement on the trade mark of the Ethyl Gasoline Corp. The Ethyl corporation also asks damages.

The defendant in Ohio is the Scioto Petroleum Co. of Columbus and the defendants in the Wisconsin case are George L. Clymer, doing business as the Ethylene Gas Co., and the Robert Mitchell Fuel Co., both of Madison. In the Ohio case the court issued a temporary injunction against the Scioto Petroleum Co. The Ethylene fluid is handled by the Ethylene Sales Co., Dallas, Texas.

The petitions in both cases ask the court to enjoin the defendants: From using any label or device like those of the Ethyl Gasoline Corp. or any other label or device which by appearance, color arrangement or otherwise is calculated or likely to be mistaken for the label or device of the plaintiff.

"From using the words Ethylene Fluid or Ethylene or any like word or words as a name or designation or without clearly and unmistakably distinguishing the same from the product of the plaintiff.

"From doing any act or thing calculated or likely to induce the belief that the product sold by the defendant is or contains the genuine product of plaintiff.

"That the defendant be required to account to plaintiff for all profits realized and to pay damages."

The Wisconsin petition says that George L. Clymer "is engaged in Madison, Wis., in the sale and distribution to dealers and service stations of an alleged anti-knock for mixing with gasoline. Said alleged anti-knock compound is mixed by dealers with gasoline and said dealers use, in connection with the sale of said anti-knock compound and gasoline, devices in close and intentional imitation of plaintiff's said device, which devices are distributed by said defendant George L. Clymer in connection with the product sold and distributed by him."

The Robert Mitchell Fuel Co. is named as a jobbing company which sells the product mixed with gasoline to the public.

In both cases it is charged by the Ethyl Gasoline Corp. that the gasoline sold under the device it claims is an infringement has no substantial advantage over ordinary gasoline and that the addition of "'Ethylene fluid" does not substantially increase the efficiency of gasoline.

# Oxidation Test for Lubricating Oils To Show How They Stand Up

By Dr. Typke*

*Translated from Petroleum Zeitschrift, July 10 issue*

*Dr. Typke, who has done a great deal of work on oils, particularly transformer and switch oils, seems much alarmed at the fact that there is not, he says, any generally accepted test to tell how long lubricating oil in use will resist breaking down due to its contact with oxygen.*

*He advocates extension of the oxidation test now used for some of the special oils to the testing of all kinds of lubricating oils.*

*It seems to the editors that the doctor is unduly alarmed and that widespread damage from the use of improper oils in this day of accurate chemical control of refinery processes is unlikely to occur.*

*He himself recognizes that he has presented only one side of the case and he invites discussion from the other side, the refiners' side. We would be glad to publish any remarks called forth by the accompanying paper.—Editor.*

IT HAS lately become customary to designate many oils as "refined" which have only been treated with bleaching earth or a similar material. Because such oils, which heretofore have been known as filtrates, are now being recommended for uses for which formerly only oils that had undergone chemical treatment were considered suitable, this article will discuss the relation between refining (treating) and the resistance ability of lubricating oils, with particular consideration of oils which have been purified only by physical processes.

It is a known fact that it is not the saturated portions of petroleum distillates, those portions which are the most stable, that possess the best lubricating qualities. Refining, therefore, is desirable for oils of which high quality is required because an unrefined oil is too easily changed (in service). It must be the aim of treating to preserve the lubricating qualities of the oil to the greatest possible degree by making it resistant to oxidation inasmuch as all the changes that take place in the oil are due to oxidation.

The changes that take place in oil during use will not be further discussed here. Frank** particularly has reported more fully on this. Unfortunately, refining of lubricating oils must be more or less of a compromise because the optimum of lubricating value and the optimum of resistance ability do not fall together. The good lubricating qualities of an oil are minimized to a considerable degree if the oil is to possess the greatest stability.

It is possible, however, by the proper procedure in sulfuric acid treating to produce an oil that keeps its lubricating value for the most part and is still sufficiently stable against change. If there are today on the market many oils that are refined beyond the desirable point this is due less to the anxiety of the refiner to put out a stable oil than to the preference of the user for a light colored oil.

The inexperienced user believes that if the oil is light colored he is assured that it is pure; this, however, is not always the case. For example, oil with a high soap content can appear completely bright and clear. Gradually it is becoming known that the color of an oil has nothing or very little to do with good or bad qualities of the same and it is to be hoped that oils that have been too heavily treated with the sole object of giving them a lighter color will gradually disappear from the market.

The very heavily treated white oils that find application for many special uses, for example as watch oils, because of their very small use for lubricating purposes, may be expected entirely from the foregoing observations.

If at present some of the large oil companies are putting on the market oils that have been subjected to treatment only with fuller's earth or the like, it is not because they are convinced of their superior goodness but because of the greater cheapness of producing the so-called filtered oil. It is well known that in America the most valuable oil fields, those of Pennsylvania, are becoming exhausted.

The ever diminishing output of these valuable oils will presently all be used up at home and smaller and smaller quantities exported. The oils produced in other American fields are not so well suited for the production of lubricating oils. It cannot be said, however, that no high grade lubricating oils can be made from them; the difficulty is that the losses in normal treating are considerably greater and it is to avoid these treating losses that physical treating with bleaching earth is resorted to.

The fact is that oils having sufficient stability can be produced by filtering from high class crudes which would suffer small losses in acid treating, but from oils that have heavy losses in acid treating this is often difficult if not impossible.

In the following when the terms "filtrates" and "filtered oils" are used it is not to be taken that the oils in all cases are filtered over the absorbent material because the treatment can often be as well or better carried on in mixing containers (contact filtering). The expression "filtrate" is used because it has become the current term for oils that have not been subjected to chemical treatment.

In the front rank of materials for purifying oils are fuller's earth, Florida earth, and more recently, activated earths—as well as bauxite and other sorts of clay. Silica gel, upon which great hopes were once based, seems not to have come into general use.

IT IS all the same to the user whether the oil is produced by a cheap process so long as it meets the requirements of its particular use. That is very true but will the customary testing methods really show the properties that are important as affecting the behavior of the oil in use?

For instance, if one looks over directions and specifications for lubricating oils of various kinds he finds fire point, viscosity, acid and asphalt content, pour test and others specified, but about the exact properties of the same that are essential to its value, nothing is found; namely about its lubricating value and its stability. The reason for this is that we have no practical method of determining these qualities.

With an oil testing machine it can only be determined which of the tested oils is adapted to that machine; methods for testing the wetting ability of an oil on metal or alloy surfaces have not been able to make much headway in practice.

**Maschinenbau 1927, 231. Petroleum 1926, page 268.

*Chemical laboratory transformer factory, German General Electric Company, Berlin.

There has been much fundamental scientific work done in this province but it will be a long time before the problem of devising a satisfactory workable method to determine the lubricating value of an oil is solved. In the meantime we must make up our minds that we can approach the subject only from the standpoint of experience.

It is otherwise, however, when it comes to determining the resistance to change of an oil, which is the factor upon which its useful life in service depends. For various special oils, such as insulating and turbine oils, necessity has compelled the development of methods of testing resistance qualities. Why should it not be possible with other oils?

It is conceded that, with insulating oils, the circumstances are somewhat different, inasmuch as with these oils lubricating properties play no part but with turbine oils the problem is the same as with all other lubricating oils; that is, the good lubricating qualities of the oil should change as little as possible under the influence of heat and oxygen.

THE objection may be offered to these arguments that turbine oil is used for a superior lubricating purpose. To that the reply is that there is no longer any inferior purpose in lubrication. Name a point where lubricating oil is used where the employment of an oil unsuitable does not make necessary repairs costing many times the sum that would have been required to buy the proper oil.

For all points of lubrication—it is immaterial whether they belong to the classes which heretofore have been receiving the most attention or whether they belong to the so-called less important—the best oil is just good enough. The test of the oil is whether it retains its good properties in use and possesses sufficient resistance to the influences met with in operation.

Naturally with some oils, for example, air compressor oils, determination of the resistance to oxidation is most important. Ernst* calls attention to the necessity for a lubricant to have good qualities that last long in service. Ernst unfortunately does not point out how important it is, before the oil is put in service, that it be tested to make sure it possesses the necessary resistance to change.

With transformer, switch and turbine oils the method of testing for stability is the so-called tar number (Verteerungszahl) in which the oil is heated for 70 hours at 120 degrees C. with the introduction of oxygen and then the lye-soluble portions are gravimetrically determined. Lately, with insulating oils at least, besides low tar number it is required that during this oxidation test the oil shall form no asphalt that is insol-

*Ernst, Maschinenbau, 1927, page 229, 286.


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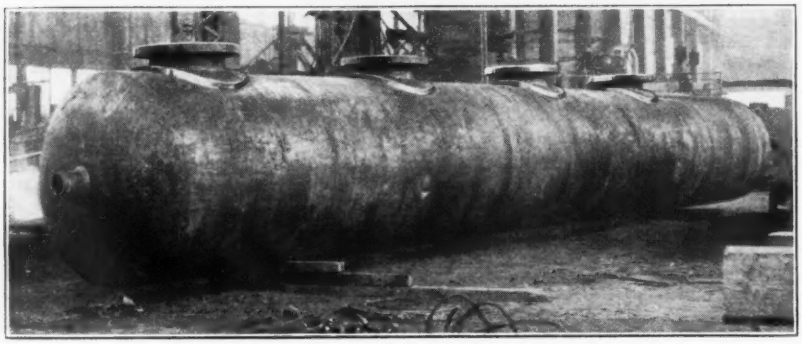

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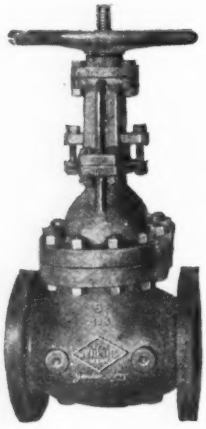

*Fig. 204*
*Flanged, Jenkins Extra Heavy Iron Body Gate Valve*

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uble in benzine and that during treatment with lye no separation shall appear.

If the determination of the tar number is somewhat troublesome, nothing better has been found as yet to take its place and it appears the simplest, in the form laid down above, to serve as a reference method to determine the resistance of other lubricating oils as well as of transformer and switch oils.

The determination of the tar number, according to the reference method, is to be recommended because, with the introduction of oxygen, undesirable properties of the oil are more easily recognized. The tar number test does not make necessary very heavy treating of the oil. In fact, an oil of rather low tar number can be made by careful treating.

Of course, the same high quality held to be necessary for transformer and switch oil would not be necessary for all lubricating oils but turbine oil requires high quality.

A simplification of the test prescribed for insulating oils can be obtained in that the quantity of sludge (Schlamm) could be determined by centrifuging instead of precipitating it out by means of benzine. Whether a titration of the acid number of the oxidized oils instead of gravimetric tar number determination answers the purpose appeared doubtful because by the tar number determination more groups of reaction products are caught.

By observation of the sludge formation it can be recognized whether an oil has been sufficiently treated. Oils that have not been subjected to careful enough treatment will form considerable sludge in the tar number oxidation test. In principle the foregoing procedure of course is not changed when the test for resistance is carried out by other methods.

For example, the test of oils for sludge formation can be so carried out that air is admitted for two and a half hours, the oil is heated to 250 degrees C. and then is thinned out with petroleum ether to precipitate the sludge. The determination of the quantity of sludge then follows in the customary manner by filtering out and weighing.

How to carry out the test for resistance is the principal problem confronting us. Whether a test is necessary under present conditions when more and more merely filtered oils are coming on the market is a secondary question. No further arguments are needed here concerning the development of the test itself. The foregoing suggested methods should be carried into practice for determining the resistance of oils. The more completely the changes in the oil can be caught by the testing method, naturally the better.

It may well be that the next step will be the universal adoption of the method for testing insulating oils in which already there is a background

of experience and a growing tendency to carry out the test so that the oil soluble products of reaction as well as the separated sludge will be detected.

The mere existence of a specification as to the resistance of an oil would be of advantage as the individual user, on account of the difficulty of the method, is often unable to determine for himself whether or not the oil meets the requirements.

If such a specification was generally adopted the refiners would have to furnish oil to meet it and would be held liable for damage that might occur if the oil was not up to standard. It is scarcely to be feared that with such a specification established oil companies would be able to avoid complying with it.

The oxidation test for lubricating oil would be the guarantee to the user that treating only with fuller's earth had not been used by the manufacturer on oils for which such treatment was not suitable.

If the oil delivered to the user meets the requirements in every respect, even in resistance to breaking down, the user need not care whether it was produced by a cheap process or whether it has been treated at all or not.

But it is necessary that the oil really possess such characteristics that it will stand up for a long time in use. Through the use of one of these test methods oil that is not suitable for the purpose must be detected at the start and barred from use.

## Western Metal Congress Meets in January

LOS ANGELES, Aug. 31.—The first western metal congress and machinery exposition to herald the development of the industrial west, will be held Jan. 14 to 18 at Los Angeles in connection with the semi-annual meeting of the American Society for Steel Treating,

Among the technical societies participating in the addresses will be the California Division of Development and Production Engineering of the American Petroleum Institute and the Chamber of Mines and Oils of Los Angeles.

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KANSAS CITY, Aug. 31.—B. G. Shepard, president of Inter-State Oil Co., is vacationing in the east accompanied by his family. Mr. Shepard is visiting relatives in Virginia and Connecticut.

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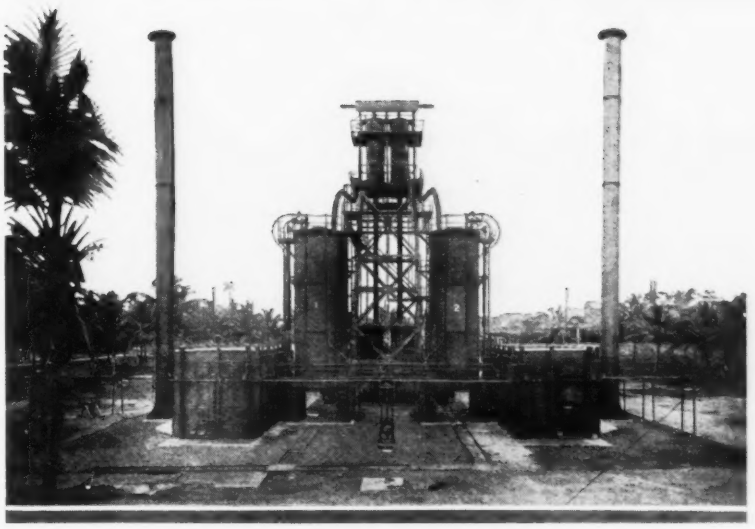
KANSAS CITY, Sept. 4.—Clyde B. Hood, chemist for Inter-State Oil Co., recently bought cigars in celebration of an eight-pound future lubrication specialist, who arrived at the Hood home Aug. 23, according to Roy Spear, sales manager for the company.

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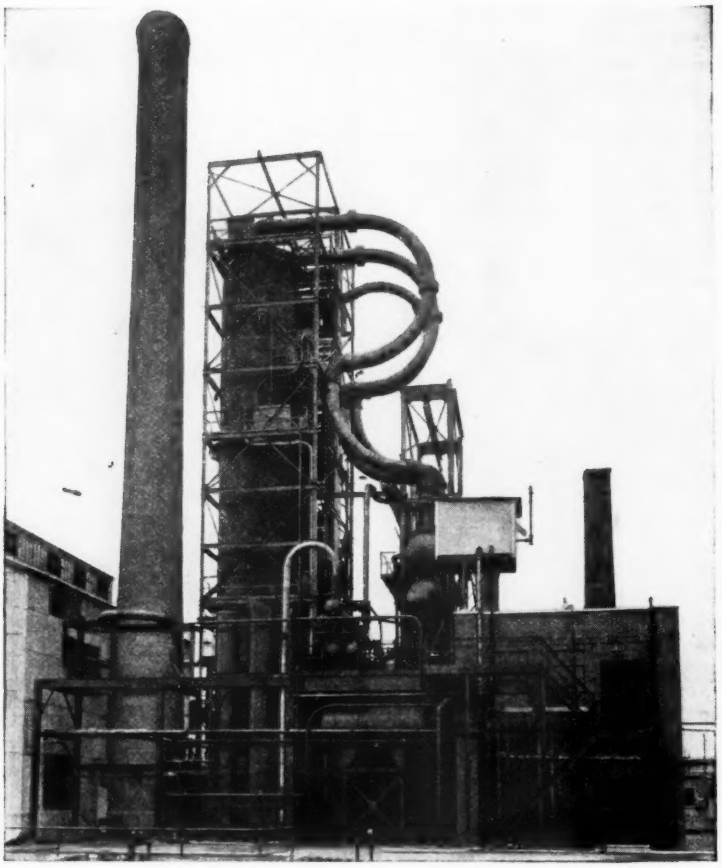

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# Fueling the Junkers Plane for Greenely Island

*This Junkers plane and the tank truck standing alongside have written aviation history. The plane is the one which hurried to the assistance of Baron Von Huenefeld and his two companions while they were marooned on Greenely island on the successful flight westward across the Atlantic. The photograph was sent in by the Davis Welding & Mfg. Co., Cincinnati, maker of the truck tank.*

## New Equipment and Notes of Manufacturers

**Pyrene Mfg. Co., Newark, N. J.**, has published a booklet on its Phomene accumulator system, a self-starting and self-operating system for immediate application of foam where and when fire breaks out. The system consists of a globe automatic detector which flashes the signal to the globe automatic valve when fire starts. A Phomene accumulator, filled with foam-making powder, automatically makes foam when water is admitted to it. A foam distribution system designed by fire protection engineers properly applies the foam to the hazard. It extinguishes fire, protects against reignition and shuts itself off, the company claims.

* * *

**The Brown Instrument Co., Philadelphia, Pa.**, has off the press bulletin No. 93 on various types of resistance thermometers for oil refineries and other industries where the indication, recording and control of humidity is necessary. These devices are furnished to operate within a wide variety of temperature ranges. Bulbs for temperature measurement can be located at any number of points to measure at virtually any distance. These thermometers have no cold junction. They are equipped with bulbs of small dimensions and high accuracy, which are easily tested and replaced.

* * *

**Ross Heater & Mfg. Co., Inc., Buffalo, N. Y.** has off the press a bulletin descriptive of Ross products for oil refineries and power plants, such as liquid and vapor heat exchangers, steam jet air pumps, condensers of various types, and various other equipment suitable for natural gasoline plants as well as refineries.

The booklet also contains tables giving the American standards for cast iron pipe flanges and fittings, and data on compensation for expansion in steam lines; also detailed description of many of the company's products.

* * *

**Gladiator Mfg. Co., Auburn, Ind.**, is marketing the Gladiator automatic air tower for filling stations and garages. A stop signal which indicates when the desired pressure has been reached, and fast and accurate service, are claimed by the company to be features. The air tower is made in six models to meet various requirements. Model TW is the complete unit with water attachment, light and swinging hose tower. The other five models are variations.

* * *

**De Lavergne Machine Co., New York**, manufacturers of ice machines and diesel engines, announces that it is moving its tools, equipment and inventory from its former quarters at 138th street and East river, New York, to the machine shops of the William Cramp & Sons Ship & Engine Building Co. in Philadelphia.

* * *

**Oil Conservation Engineering Co., Cleveland, O.**, has recently introduced a new, two-bolt coupling with an oil tight, heat-resisting asbestos gasket for use with grooved end pipe carrying water, steam, gas, oils, tar or acids.

This coupling consists of a split housing, a pair of bolts, and a packing ring. The housing is of certified malleable iron providing for greater corrosion resistance than steel, and so designed as to provide maximum strength with minimum weight. The standard packing ring is of molded asbestos—proof against oil or temperatures.

The coupling is quickly assembled by slipping the packing ring over the pipe ends, and bolting the two half housings together over the ring. There are but two bolts to tighten—a wrench is the only tool needed.

Sufficient play is provided between the housing and shoulders of the groove to allow for considerable expansion and contraction of the pipe.

The standard coupling withstands pressures up to 600 pounds per square inch, in small sizes, and 300 pounds in the larger; and temperatures up to 600 degrees F., it is claimed.

The Oceco coupling is said to be especially well adapted for making up coils such as condensers, coolers, and heat exchangers. Not only does it effect a saving of installation time and labor, but because of the ready accessibility of each pipe in the coil, the cleaning and repairing of such coils is simplified.

Standard tees, elbows, return bends, and fittings with grooved ends, as well as grooved end pipe and tools for cutting grooves in the field are readily available.

# Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

POSSIBILITY that vapor phase cracking might to some extent at least replace cracking in the liquid phase has been recognized by everybody but it remained for the Pure Oil Co. to convert apparatus for liquid phase cracking into vapor phase apparatus.

The August issue of Pure Oil News tells how this is being done at the company's Heath, O., refinery:

"The construction of the new Gyro (vapor phase cracking) unit is well under way, which will increase the amount of cracking capacity and thereby pave the way for further increased crude runs. Two of the old Cross units (liquid phase cracking) erected in 1922, are now being dismantled. Much of this equipment including tower, gas receiver, control house and furnaces will be repaired and used as part of the Gyro unit."

The new vapor phase cracking unit will have a capacity of 500 barrels a day of charging stock, it is stated.

That the development of liquid phase cracking also is going ahead at this plant is shown by the following comment from the same article:

"In the latter part of 1926 two Cross units of 2000 barrels daily capacity were added to the four original type 500-barrel capacity units. The addition of these large units tripled the cracking capacity and since early in 1927 all the gas oil and residue bottoms have been cracked, greatly increasing the gasoline production. The new units operate on a recirculating basis producing no recycle stock for rerunning. By increased efficiency and experimenting on better cracking of the heavy residue bottoms from shell stills, the yield of gasoline from that source has been nearly doubled during recent months."

* * *

WHO says there is no sentiment in the refining business? A proof to the contrary comes from Dr. F. W. Breth, chief technologist of L. Sonneborn & Sons Inc., who spends his time about equally between New York headquarters and the Daugherty refinery of the company at Petrolia, near Butler, Pa. After describing how the refinery has been repeatedly rebuilt during its life of more than 50 years, Dr. Breth says:

"The first still ever used in the refinery is being preserved as a souvenir. It is quite interesting to see this old timer which has been moved from its original site to a pedestal of honor in the center of the refinery, decorated with a bronze tablet giving its history as a constant reminder of the traditions of the company. The still's capacity is only 40 barrels and it appears to be in first class condition despite its age."

* * *

SOUTHWESTERN ENGINEERING CORP., of California and Tulsa reports considerable new construction work under way in refineries and natural gasoline plants. Among the jobs it is carrying out are: A 25,000-gallon vapor recovery unit for the Gulf Refining Co.'s plant at Girard Point, Pa., (Philadelphia); a 3000-barrel pipe still and its accompanying equipment for Berry Bros., Waterloo, Ark., and three natural gasoline plants, one for the Gypsy Oil Co. in Bowlegs field, one for the Sobri company at Borger, Tex., and one for El Aguila in Mexico.

A NEW type of waste heat boiler which serves the double purpose of generating steam and muffling the exhaust of a gas or oil engine is described in the current issue of "Fuel," a British publication, by R. Wigginton. The boiler is said to resemble a collection of test tubes and Mr. Wigginton quotes E. Kilburn Scott for the following description of it:

"The boiler is of the upright cylindrical form with closed tubes attached to the curved surface and projecting inwards into the hot gas space. The tubes are made of steel, tapered like a thimble, the smallest size being 1 inch in diameter and 2 3/16 inches long for a boiler of 10 square feet of heating surface and 273 tubes. A boiler of 700 square feet heating surface has 1150 tubes, each of 3¼ inches diameter and 12 inches long.

"When run with exhaust gases from a diesel engine, the boiler makes an efficient silencer. Some installations have boilers filled with water during the winter and used as heaters while in the summer they are empty and run only as silencers."

A possible new wrinkle for refineries or gasoline plants where oil or gas engines are used.

* * *

CONSIDERABLE comment favorable to the attitude of the Indian Refining Co., Lawrenceville, Ill., has been heard since publication in this paper* of the article describing the explosion which occurred at that company's plant Aug. 1. The comments came mostly from safety specialists whose task it is to bring about a reduction in the number of accidents occurring in refineries.

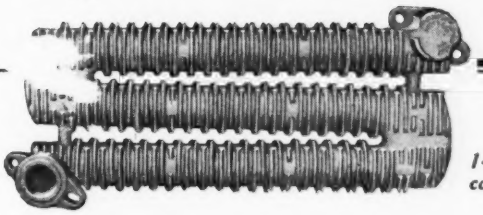
These men are unanimous in saying that if companies would give out full information about accidents that occur in their plants it would go far toward reducing accidents in other plants. It is not likely that frank statements of what occurred and what caused it, as nearly as could be determined, would prejudice the interests of the company involved.

We believe this is true. If superintendents, foremen or subordinate workers read about what happened in some other plant and find it was caused by a wrong method of doing something that they do every day in the course of their work, it would seem that they would look upon their duties and their responsibilities in a new light.

In every case of a fatal accident there is a coroner's inquest and its record is public so that anyone interested in suing for damages can get access to it. Ambulance chasing lawyers are always waiting a chance to bring suit against a big company in behalf of some killed or injured workman. So it is not likely that publication of the story of an accident is going to make it harder for a company in a legal way. It might even put the company in a more favorable light in the public mind.

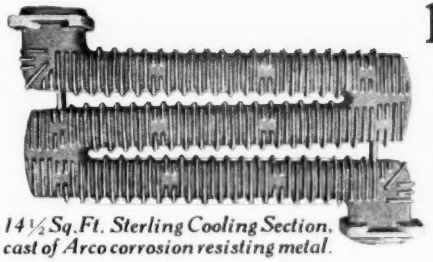
We think the position of the Indian Refining Co. is praiseworthy and we would like to see every refinery accident which results in loss of life, serious injury or serious damage to property, discussed from the standpoint of cause and from the standpoint of prevention of future accidents of the same sort.

*National Petroleum News, Aug. 8, 1928, page 23.

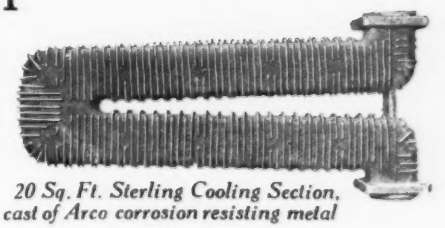


*14 Sq. Ft. Sterling Condensing Section, cast of Arco corrosion resisting metal.*

Today there are numerous special processes for refining oil. Yet, in spite of this, the sale of Sterling Oil Sections continues to increase. And of particular significance is the fact that fully 85% of Sterling sales are repeat orders proving the confidence of refinery engineers in the efficiency and durability of Sterling Sections. A very large percentage of Sterling Sections are for replacement of other types of condensers, which evidences real need for Sterling Oil Sections. Especially so, because for replacement purposes, condensers are always specified by experienced buyers. Our engineers will gladly show you where and how Sterling Oil Sections can be applied in any type of plant.



*14½ Sq. Ft. Sterling Cooling Section, cast of Arco corrosion resisting metal.*



*20 Sq. Ft. Sterling Cooling Section, cast of Arco corrosion resisting metal*

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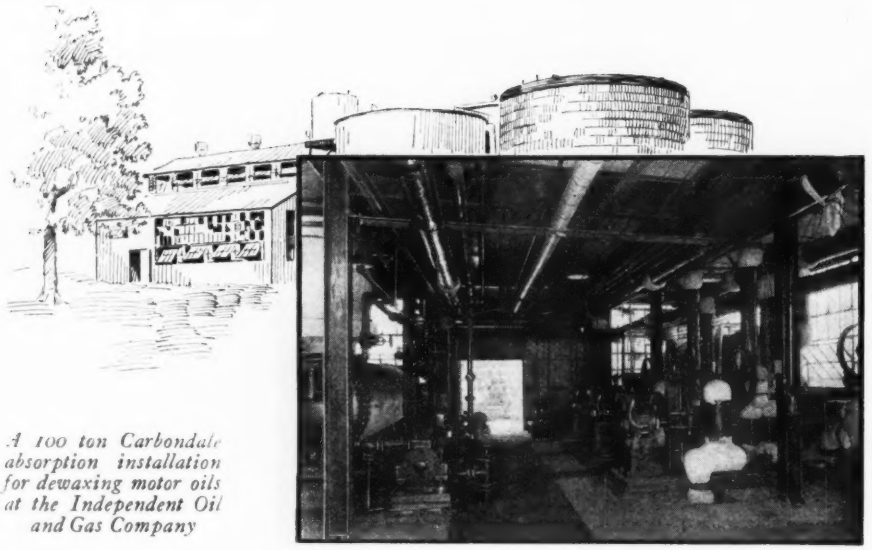

*A 100 ton Carbondale absorption installation for dewaxing motor oils at the Independent Oil and Gas Company*

# Chilling below zero —for better motor oils

Modern refining of motor oils frequently demands temperatures considerably below zero — a demand readily satisfied by Carbondale Refrigeration as testified by numerous installations throughout the country.

Carbondale pioneered the development of modern Wax Plant equipment. Such equipment as Carbondale Chilling Machines and Filter Presses have won the confidence of refiners by their efficient service.

For refrigerating effect, at any desired temperature in any capacity, there is a Carbondale system that will obtain the desired result both economically and consistently.

*Write for a copy of the Wax Plant Equipment Bulletin*

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CARMACO *for Refiners*

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**Bulk Storage and Station Tanks**

**Forty years successful experience; plant fully equipped for fabricating plate up to 1½" thick.**

**Pressure Stills for Cracking Process - Fractionating Towers - Dephlegmating Towers, Bubble Towers - Heat Exchangers - Agitators - Steam Stills - Crude Stills - Condenser Boxes, Run Down Tanks - Blending Tanks - Hemispherical Tanks - Blow Cases - Acid Tanks, Compounding Kettles - Storage Tanks to 80,000 Barrels - Smoke Stacks and Breechings, etc.**

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## Collectors Grab at Straw In Mississippi Case

CLEVELAND, Sept. 1.—A little solace is found by some gasoline tax collectors in the recent decision of the United States Supreme Court in the Mississippi case in which the state of Mississippi was enjoined from collecting tax on gasoline sold to the United States government.

A. N. Bobbitt, gasoline tax collector for Indiana, holds the opinion that prohibition of the tax does not apply to rural mail carriers or other government employes who pay personally for the gasoline used on government business.

The Supreme Court ruled that the states may not burden or interfere with the exertion of the national power, or make it a source of revenue, or take the funds raised, or tax the means used for the performance of federal functions.

The court found that the amount of money claimed by the state depended upon the number of gallons sold and the operation of such a law was to retard, impede and burden the United States in the exercise of its powers.

The state contended that the tax was a privilege tax but the court ruled, "To use the number of gallons sold the United States as a measure of the privilege tax is in substance and legal effect to tax the sale."

The Mississippi tax suit was brought by the Panhandle Oil Co. which was supplying the U. S. Coast Guard fleet in the Gulf of Mexico and the Veterans' hospital at Gulfport. The Mississippi Supreme Court had upheld the state's right to tax gasoline sold the United States.

## New Patents

### Aug. 21, 1928

#### PRODUCTION

**Apparatus for Heating Oil Wells**—Patrick V. Downey and Clifford H. Wendroff, Denver, Colo. Filed March 26, 1927. No. 1,681,523.

**Oil-Soluble Naphthenic Compound**—Oscar E. Bransky, Whiting, Ind., assignor to Standard Oil Company, Whiting, Ind. Filed Oct. 29, 1923. No. 1,681,657.

**Apparatus for Converting Hydrocarbon Oils**—Oswald C. Brewster, Casper, Wyo., assignor to Standard Oil Company, Whiting, Ind. Filed June 20, 1925. No. 1,681,658.

**Bailer**—Claude E. Coleston, McKittrick, Calif. Filed Nov. 10, 1926. No. 1,681,660.

#### MISCELLANEOUS

**Apparatus for the Manufacture of Mixed Gas**—Morris William Travers, London, and Frank William Clark, Lymm, England, assignors to Firm Merz & McLellan, London, England. Filed Jan. 15, 1924. No. 1,681,313.

**Low-Temperature Fuel Distillation**—Edmund George Weeks, Dunston, England, assignor to Firm Merz & McLellan, London, England. Filed Jan. 15, 1924. No. 1,681,450.

**Breather Bag**—John E. Moore, Whiting, Ind., assignor to Standard Oil Company, Whiting, Ind. Filed May 13, 1927. No. 1,681,676.

**Flame Arrester**—Stephen H. Brooks, Los Angeles, Calif., assignor to Brooks Engineering Corporation, Los Angeles, Calif. Filed Sept. 16, 1926. No. 1,681,698.

# The Application of Gas and Gasoline Analysis to Plant Control

By J. C. Burks*

*Read at California Natural Gasoline Association Meeting, Los Angeles, Aug. 9, 1928*

WE ARE interested in producing natural gasoline of such specifications that the refiner can include it in motor fuel to the extent that a maximum return to the natural gasoline manufacturer is realized. This will be accomplished through the production of a relatively large volume of low distillation recovery gasoline on one price scale, or through the production of a smaller volume of high distillation recovery gasoline on a higher price scale, or on some intermediate basis.

Whatever the basis decided upon, however, we are interested primarily in producing all of the gasoline meeting this specification contained in the gas treated. Furthermore, there is no denying the fact that we are confronted with economic conditions that are likely to continue indefinitely, both from a standpoint of overproduction and the encroachment of cracking processes.

It is obvious that plant operating methods will have to keep pace with these conditions and that methods of plant control that have been generally used, particularly charcoal tests, are unsatisfactory and inadequate.

As the average efficiency of gasoline plants generally has increased, the percentage of the lighter constituents included in the product increased greatly, resulting in more stringent specifications being written by the refiner until we now generally accept 90 per cent as a proper distillation recovery for a good grade of natural gasoline. It is not the purpose of this paper to discuss the relative merits of natural gasolines as related to gravity, distillation recovery, vapor pressure, or volatility, but to take conditions that are now imposed on the average operator and attempt to show how he may be assisted in producing the maximum gallonage meeting his particular sales specifications. I believe the desired results can be attained only through accurate knowledge of what his raw material consists of and the exact composition of his products.

Theoretically the desired operating condition would be the removal of all of the butanes and heavier fractions from the wet gas with a minimum amount of propane and lighter, the elimination of all of the propane and lighter from the condensed make and the elimination of just sufficient butanes to give the required distillation recovery.

*Author Burks prepared 15 charts to illustrate the accompanying article. The majority of these are diagrammatic illustrations of the properties of samples of gas and gasoline as analyzed. Charts 1 and 2, which are republished with this article, are typical of the method of showing graphically the properties of the various samples discussed in the article.*

As the production of propane-free natural gasoline is accomplished through a substantial loss of heavier constituents (even in the best regulated stabilizing units) the usual plant operating balance will be found where small percentages of propane remain in the finished product, with a correspondingly greater net production for a given recovery specification.

*O. C. Field Gasoline Corp.

The other extreme is found in plants that are leaving substantial amounts of butane in their residual absorber gases and are having difficulty meeting distillation recovery requirements on the gasoline they are making. Between these two extreme cases lie innumerable plant operating conditions, all confronted however, with the same question: How many gallons of specification gasoline are contained in the gas available for treatment and what are the plant conditions most suitable for its recovery?

In other words a plant will lose, we will say, 10 per cent of its production in increasing its distillation recovery from 85 to 90 per cent. What part of that loss was due to elimination of propane? How much butane was lost along with it? Could larger amounts of butane be included in the make if still more propane was eliminated, and if so, how much? etc.

To assist us in a few of these problems, we started experimenting last winter with an analysis apparatus based on the principle of cold fractionation for determining the hydrocarbon components of gasoline and

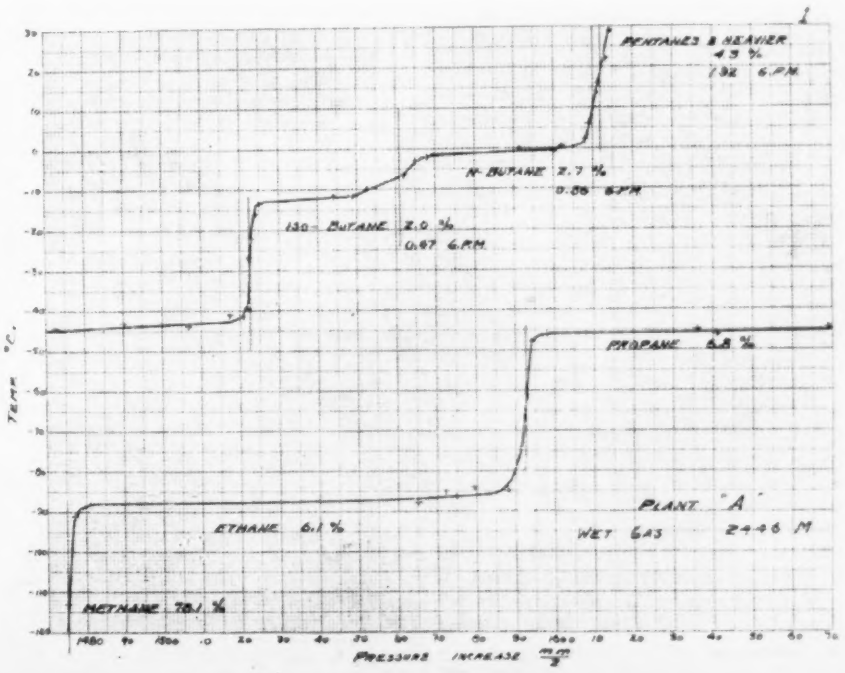



*Fig. 1. analysis of wet gas entering Plant A*

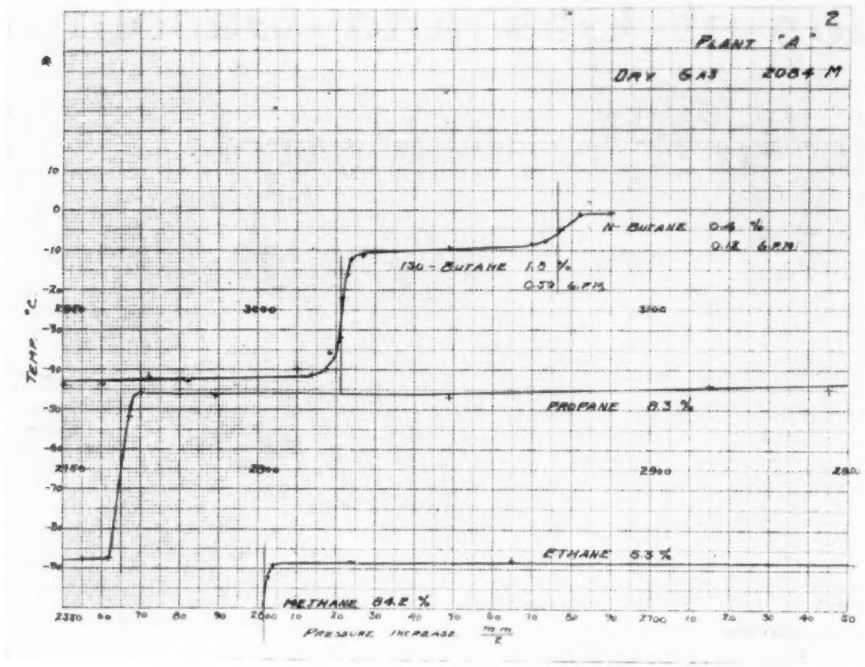



*Fig. 2, analysis of the dry gas leaving the absorber of Plant A*

gases. The apparatus consists of a carefully packed fractionating column, the upper or condensing portion of which is controlled by a refrigerant. The different constituents are distilled off at constant temperatures and measured as vapor in a large receiver by means of pressure increase.

We will now consider a few typical analyses and see how they may be interpreted: Fig. 1 shows an analysis of wet gas entering Plant A, a 30-pound 32-degree charcoal determination as specified by Bulletin No. TS 121, which indicated 3.10 gallons per 1000. We find that this gas contained 78.1 volume per cent of methane; 6.1 per cent ethane; 6.8 per cent propane; 2.0 per cent or 0.67 gallons iso-butane; 2.7 per cent or 0.86 gallons n-butane; and 4.3 per cent or 1.92 gallons pentanes and higher. The question now arises, is the analysis accurate? Dr. G. G. Brown, of the University of Michigan, made a statement at Tulsa that his apparatus was accurate to within one-tenth of a per cent in testing motor fuels.

We do not find such accuracy necessary, however, in plant control work, nor do we imagine that we are getting results anywhere near this accuracy; but through refractionation of the separated constituents we are certain that the apparatus is more accurate in determining the components of gasoline and gases than are the other yardsticks by which plant efficiency is determined.

We do not consider a master meter on a plant inaccurate for instance, if it is 1 per cent off. Gasoline measurements at different temperatures are likely to be one-half of a per cent off, so for practical purposes we consider the accuracy in determining the hydrocarbon components of gasoline and gases by this method is more accurate than the methods used to determine other factors in the plant equation.

Analysis 2 shown here as Fig. 2 is the dry gas leaving the absorber of the same Plant A. Charcoal analysis showed 0.33 gallons per 1000. The gas contained 84.2 volume per cent methane; 5.3 per cent of ethane; 8.3 per cent propane; 1.8 per cent or 0.6 gallons iso-butane; and 0.4 per cent or 0.12 gallons per 1000 n-butane.

Analysis was made of a sample from the run tank of this same Plant A; showing 4.3 per cent propane; 5.0 per cent iso-butane; 28.2 per cent n-butane; and 62.5 per cent pentanes and higher. Gravity of this product was 84.3 degrees A. P. I.; distillation recovery 79.8 per cent. You will note from these analyses that it is entirely possible to fractionate mixtures of the lower paraffin hydrocarbon series into their components with rather sharp cuts, with the possible exceptions of iso and normal butane. Even in this case where the difference in boiling points at atmospheric pressure is only about 12 degrees C., a very sharp cut can be made if time is allowed for it. However, we find that the same result is obtained in running more rapidly and extrapolating the curve as by taking a considerably longer time and obtaining a sharper break.

We will now consider a somewhat similar case except that here a stabilizing unit is involved, although operating under extremely poor conditions.

A sample of wet gas entering Plant B, on a 30-pound 30-degree charcoal analysis showed 3.0 gallons per 1000. Methane 78.8 volume per cent; ethane 6.3 per cent; propane 7.2 per cent; iso-butane 1.1 per cent or 0.35 gallons; n-butane 2.8 per cent or 0.90 gallons; pentanes and higher 3.8 per cent or

"B"

WET GAS to Compressors 24 Hrs. 2020 M CU FT
DRY GAS from Absorbers 24 Hrs. 1775 M CU FT
RESIDUE VAPOR from Stabilzr 24 Hrs. 88 M CU FT
PLANT PRODUCTION (Net 60° F) 24 Hrs. 5110 GALLONS

| | | | | M CU FT | | | GALLONS | | |
|---|---|---|---|---|---|---|---|---|---|
| | | % By Vol. | GPM | $CH_4$ | $C_2H_6$ | $C_3H_8$ | iso $C_4H_{10}$ | N $C_4H_{10}$ | $C_5H_{12}$ Plus |
| PRODUCTION | 5110 x | 0.028 | | | | 5 | | | |
| | 5110 x | 0.024 | | | | | 123 | | |
| | 5110 x | 0.171 | | | | | | 874 | |
| | 5110 x | 0.777 | | | | | | | 3970 |
| DRY GAS | 1775 x | 0.857 | | 1485 | | | | | |
| | 1775 x | 0.077 | | | 134 | | | | |
| | 1775 x | 0.057 | | | | 99 | | | |
| | 1775 x | | 0.20 | | | | 347 | | |
| | 1775 x | | 0.12 | | | | | 208 | |
| | | | | | | | | | 0 |
| VAPOR fr. STABLZR | 88 x | 0.220 | | 19 | | | | | |
| | 88 x | 0.084 | | | 7 | | | | |
| | 88 x | 0.391 | | | | 34 | | | |
| | 88 x | | 1.97 | | | | 173 | | |
| | 88 x | | 7.90 | | | | | 695 | |
| | | | | 1504 | | | | | 0 |
| | | | | | 141 | | | | |
| WET GAS | 2020 x | 0.788 | | 1592 | | 139 | | | |
| | 2020 x | 0.063 | | | 127 | | 643 | | |
| | 2020 x | 0.072 | | | | 146 | | 1777 | |
| | 2020 x | | 0.35 | | | | 707 | | 3970 |
| | 2020 x | | 0.90 | | | | | 1320 | |
| | 2020 x | | 1.89 | | | | | | 3820 |

1.89 gallons. Total of iso-butane and heavier, 3.14 gallons.

Analysis of dry gas from the absorber showed: Methane 85.7 per cent; ethane 7.7 per cent; propane 5.7 per cent; iso-butane 0.20 gallons; n-butane 0.12 gallons. Charcoal analysis 0.30 gallons at 30 pounds 32 degrees.

Vapor from stabilizing column showed: Methane content 22.0 per cent; ethane 8.4 per cent; propane 39.1 per cent; iso-butane 6.1 per cent or 1.97 gallons; and n-butane 24.4 per cent or 7.90 gallons.

Obviously this column is in a bad way, particularly when we consider that the production still contains 2.8 per cent propane.

The rest of the analyses shows iso-butane 2.4 per cent; n-butane 17.1 per cent; pentanes and higher 77.7 per cent. Gravity of the product was 75.0 degrees; distillation recovery 92.5 per cent.

If we now take the results of these analyses and the amount of gas entering and leaving the plant as well as production, we may arrive at a plant balance as shown in Fig. 9. Iso-butane and heavier are shown as gallons. Propane and lighter as thousands of cubic feet. You can see that the sum of the different constituents contained in the production, the dry gas and stabilizer vapor are shown just between the diagonal double lines and you can see the check or lack of it, with the constituents entering the plant.

Considering the fact that these samples were taken over a two-hour period and that gas and gasoline volumes were taken over 24 hours, a closer check was not anticipated. Anyhow, we have 1,592,000 cubic feet of methane in the incoming gas, against 1,504,000 accounted for in the plant. 127,000 cubic feet ethane against 141,000; 146,000 cubic feet propane against 138,000; 707 gallons iso-butane against 643; 1820 gallons n-butane against 1,777; and 3820 gallons pentane and higher against 3970.

We will come back to this plant balance in a moment and see what effect better operating conditions would have on the amount of gasoline made and its specifications.

We will now consider a stabilizing unit producing approximately 20,000 gallons per 24 hours, of 81 gravity, 90 per cent recovery gasoline. Analysis of gasoline from run tank fed directly from column showed: Propane 2.8 per cent; iso-butane 3.6 per cent; n-butane 22.6 per cent; pentane and higher 70.9 per cent.

Residue vapor leaving stabilizing column in the amount of 175,000 cubic feet; indicated 13.3 per cent methane; 12.2 per cent ethane; 49.7 per cent or 13.6 gallons per 1000 propane; 9.7 per cent or 3.14 gallons iso-butane; and 15.1 per cent or 4.8 gallons n-butane.

Vapor leaving the run tank which

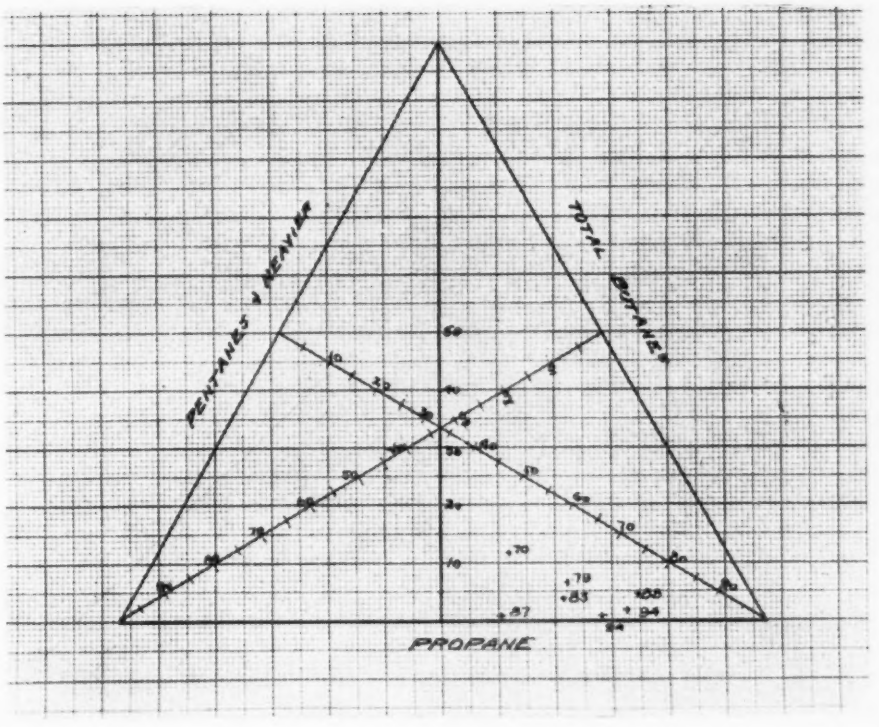



*Fig. 14, illustrating method of three-dimensional plotting*

was maintained at 5 pounds gauge pressure, amounting to 38,000 cubic feet consisted of: 24.2 volume per cent or 6.6 gallons propane; 8.1 volume per cent or 2.6 gallons iso-butane; 52.2 volume per cent or 16.9 gallons n-butane; 15.5 per cent volume or 6.5 gallons pentane plus.

If methane and ethane are converted to their liquid equivalents we have accounted for: 235 gallons methane; 364 gallons ethane; 2818 gallons propane; 1276 gallons iso-butane; 5870 gallons n-butane; 14427 gallons pentane plus. From these figures we can calculate that the run down stream or entering feed to the column had the composition: 0.9 per cent methane; 1.4 per cent ethane; 11.3 per cent propane; 5.1 per cent iso-butane; 23.5 per cent n-butane; 57.8 pentane plus.

Now, as a means of interpreting these analyses still further, let us consider the diagram in Fig. 14. You are undoubtedly familiar with this method of three dimensional plotting. Obviously if we take an equilateral triangle whose perpendicular equals unity, the sum of the perpendiculars from any point in the triangle to the three bases equals unity. Therefore, if we allow distances from one base to equal per cent of propane, distances from another base to equal per cent of total butanes, and distance from the third base to equal per cent of pentanes and higher, we can take the analyses of gasoline samples and at least get them down on paper. The scattered points you see in this diagram are a few such analyses. For most gasolines, these points will fall in the lower right of the triangle so we will enlarge the scale and include this area only.

We have taken the results of all the liquid analyses we have run so far, and located them on diagram as shown in Fig. 15, noting on each point the ASTM distillationn recovery of the sample. It would appear that until we get analyses and distillation recoveries that disprove it, it should be possible to approximate the distillation recovery of a gasoline of a given percentage composition of propane, total butane and pentanes plus, if said distillation recovery lies roughly between 78 per cent and 95 per cent. We are assuming, of course, that the composition of the pentanes and heavier fraction remains about constant and that differences in the amount of iso-butane as related to normal butane will not substantially affect distillation recovery.

I believe that we can make our first assumption safely when we consider that the distillation recovery of the usual pentanes and heavier fraction of a natural gasoline is nominally 100 per cent and that even appreciable fluctuation in the percentage of pentane contained therein would not affect the distillation recovery of the sample. As far as iso and normal butane are concerned, their differences in relation to each other undoubtedly account for some of the obvious discrepancies on the composition diagram.

A suggested remedy is the conversion of iso-butane to its n-butane equivalent in respect to distillation loss, by some approximate method. Nevertheless, from a plant operating standpoint, we can use this tendency toward a relationship between per-

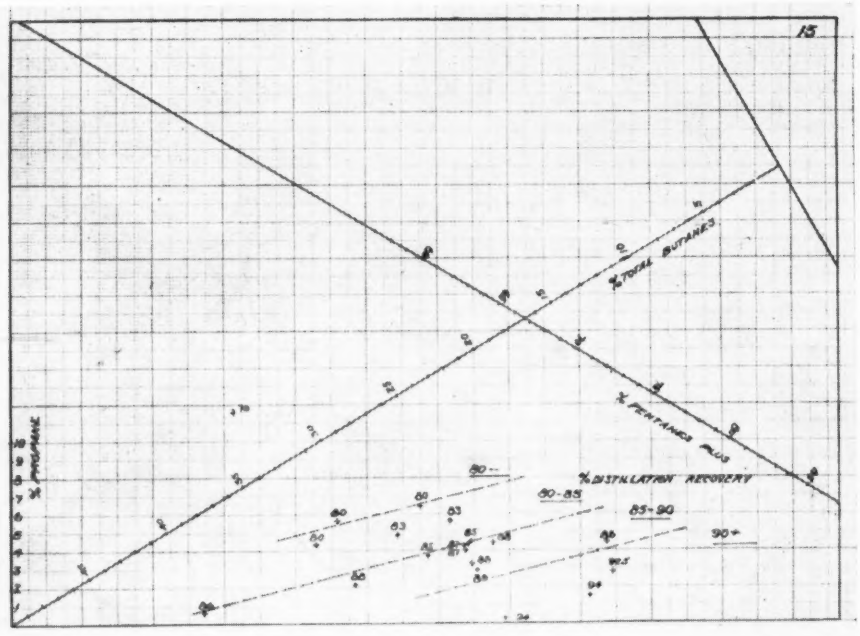



*Fig. 15, method of figuring recovery from percentage of heavier and lighter constituents*

centage composition and distillation recovery to advantage.

For instance let us again consider Plant B with the stabilizing unit so-called. We found that 208 gallons of n-butane were lost in the residual gas from absorber and 695 gallons from residual vapor from the stabilizing column. If we now change operating conditions so that all of this normal butane is recovered, we should have 6013 gallons of a product consisting of 2.4 per cent propane, 31.6 per cent total butanes, and 66.0 per cent pentanes and higher. Referring this analysis to our diagram, we would anticipate a distillation recovery of approximately 88.0 per cent. If we now make the stabilizing column perform so that the propane is cut down to 0.5 of one per cent, we would have 5900 gallons of gasoline of approximately 90 per cent distillation recovery. It is obvious that there are any number of possible combinations of propane and total butanes here in which the plant could be made to produce 90 per cent recovery gasoline and with these data at hand an operator could determine the optimum set of conditions for his particular plant.

In a similar way, we may consider stabilizing unit C. Here, we are losing 1164 gallons of total butanes in vapor from column, which, if included in the make without any other change would give us 21,164 gallons consisting of 2.7 per cent propane; 30.3 per cent total butanes; and 67.0 pentanes and higher. From the diagram we would expect a distillation recovery of between 87 and 88 per cent. However, in reducing the propane content to 0.5 of 1 per cent, we have 20,688 gallons of a product that is safely within the 90 per cent recovery requirement. On the other hand, if it was necessary to produce 95 per cent recovery gasoline from this unit, assuming that 0.5 per cent propane was the lowest practical limit at which to operate, we would have to limit our total butane to about 21 per cent cutting out production from 20,688 gallons of 90 per cent recovery make to about 18,000 gallons of 95 per cent, a loss in production of approximately 13 per cent. Under these conditions it is interesting to note that the gravity of the product would be reduced from 83.5 degrees A. P. I., to about 79 degrees A. P. I.

Assuming that 0.5 per cent of propane is a practical working basis, it would appear that for a 90 per cent recovery product the total butanes will have to be limited to approximately 32 per cent.

I might add that since these plates were made we have established a dozen or so more points on this diagram that further bear it out, but I must emphasize the fact that these data only indicate a general tendency toward a relationship that is obviously limited to the accuracy of our A. S. T. M. distillation itself.

In conclusion I would say that I believe that future plant control will be along lines we have discussed here, and that future research should be directed toward a more definite relationship between percentage composition and sales specifications.

## Urges Refiners to Report On Plant Accidents

TULSA, Aug. 31.—Officials of the Indian Refining Co. are to be congratulated for their willingness to make public the details of the fire at their plant on Aug. 1, according to the opinion of H. N. Blakeslee, petroleum representative of the National Safety Council, and D. J. Wallace, director of the safety division of the Mid-Continent Oil & Gas Association.

Both men are interested in the promotion of safe practices and elimination of accidents in all branches of the industry and were interested in the article describing the Lawrenceville accident which was written by Paul Truesdell for the Aug. 8 issue of NATIONAL PETROLEUM NEWS.

In the past the manufacturing branch of the oil industry particularly has had very little to say about its individual accidents. For the most part executives of refining companies prefer that no mention be made of accidents at their plants.

In the development of the safety idea in the oil industry it has been found that an analysis of every accident is helpful in preventing similar occurrences and even other types of accidents since it sets men to thinking.

The Mid-Continent Oil & Gas Association's safety section now publishes a monthly bulletin which is devoted largely to reports of accidents. In these reports there is a short description of the accident with a statement as to causes and how the accident might have been prevented. Following is a brief example for the current bulletin:

"There was a fire in pump house. Man was shoveling dirt, stopping holes to confine fire to building when caustic splashed in eye. (a) Man excited. (b) Caustic should not have been permitted to leak on ground."

The National Safety Council likewise issues news bulletins in which reports of accidents are given for the benefit of company safety directors, foremen and workers.

Speaking of refinery fires, Mr. Wallace described a method used at a refinery in the Mid-Continent which he believes to be effective in reducing accidents to fire fighters. In this plant a fire zone has been marked out for every unit or section of the plant. In case of fire all hands are called as usual but no men are allowed inside the fire limits except those who are actually needed for some specific piece of work.

The foreman of the unit where the fire originates is in charge of the fire. He stays in the fire zone with the yard foreman and calls for men as they are needed. All men not working are forced to stay outside the fire zone so that in case of an explosion the number of men injured will be as small as possible. It has been found by this method that work is expedited since excited men do not interfere with one another.

It is the opinion of both Mr. Wallace and Mr. Blakeslee that a full and thorough discussion of every refinery accident in the trade papers would be of great value in accident prevention.

# Crankcase Dilution and Engine Ills Laid to Imperfect Carburetion

CLEVELAND, Aug. 31

IMPERFECT carburetion or defective distribution of the fuel charge to the cylinders of an automobile engine, is the chief cause of motor oil dilution, according to James McIntosh, a mechanical engineer of Cleveland who has spent a good many years in the manufacture of internal combustion engines for both automobile and power boat use.

Complete carburetion permits perfect combustion of the charge of motor fuel, thereby eliminating the main cause of motor oil dilution, the seeping of gasoline precipitated on the cylinder walls past the pistons into the crankcase during the compression stroke, the engineer says.

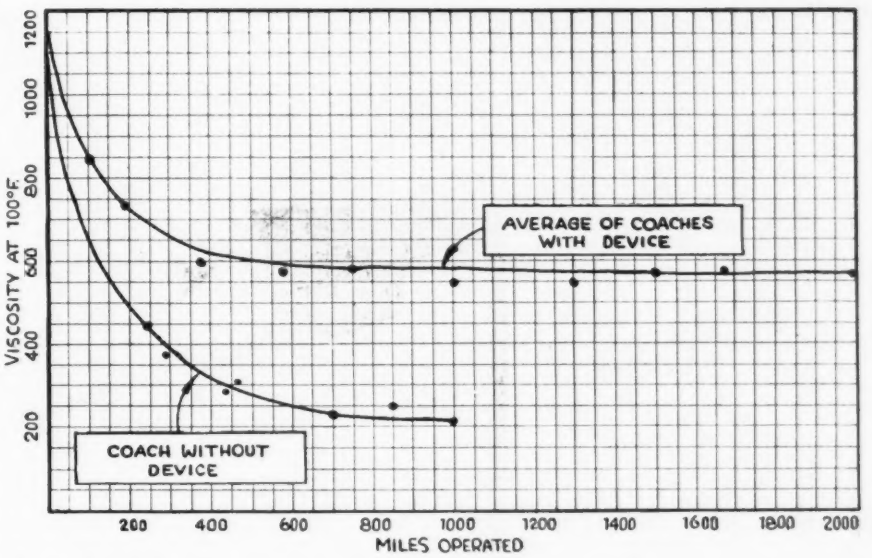
Mr. McIntosh believes he has overcome this chief cause of dilution with a small inexpensive device he calls an economizer which he inserts in the riser between the carburetor and the inlet manifold. Two of the economizers have been in use on two of the fleet of busses of the Cleveland Railway Co. used in Cleveland city and suburban transportation and records of the railway engineers show a stabilization in the viscosity of the crankcase oil. The company is unwilling to pass final opinion on the device until the engines on which they are used can be given dynamometer tests later this year.

The viscosity of the oil taken from the crankcases of the two engines equipped with the economizer and of oil taken from another bus engine, was not taken in Saybolt seconds but in another scale with a comparison device supplied the railway company by the manufacturer of a motor oil reclaiming machine. However, the figures given here are relative and are fair for comparison.

The original viscosity of the oil, according to the railway company, was 1200 seconds at 100 degrees Fahr. The viscosity at 100 degrees Fahr. reported by the refiner which supplies the railway company was 950 to 1000 Saybolt seconds. The railway company's viscosimeter gives about a 20 per cent higher reading, it will be noted.

At the end of 250 miles the oil in the coach not equipped with the device showed a viscosity of 450; at 450 miles 300; at 700 miles 240; and 220 at 1000 miles when it was replaced.

With the device installed in two busses of the same type and age as the previously mentioned bus the viscosity at 100 miles had fallen to 850; at 200 miles to 740; at 575 miles to 590; at 1000 and 1300 miles to 550; and at 1500 and 2000 miles it had risen to 570.




*Curves show decline in viscosity of crankcase oil when McIntosh device was used and when not used. The dots are the points at which samples of the crankcase oil were taken for testing for viscosity. This graph is taken from a plat made by engineers of the company that is testing the device*

The oil in the bus without the economizer, according to the record of the railway company, reached the 570 viscosity mark at only 150 miles. Mr. McIntosh pointed out that the oil fell only 22 points in viscosity after the busses had traveled 600 miles and until they had traveled 2000 miles. At this rate of dilution, Mr. McIntosh predicts, the oil in the busses with the device would not become as diluted as the oil in the busses without the device until approximately 26,000 miles had been traveled.

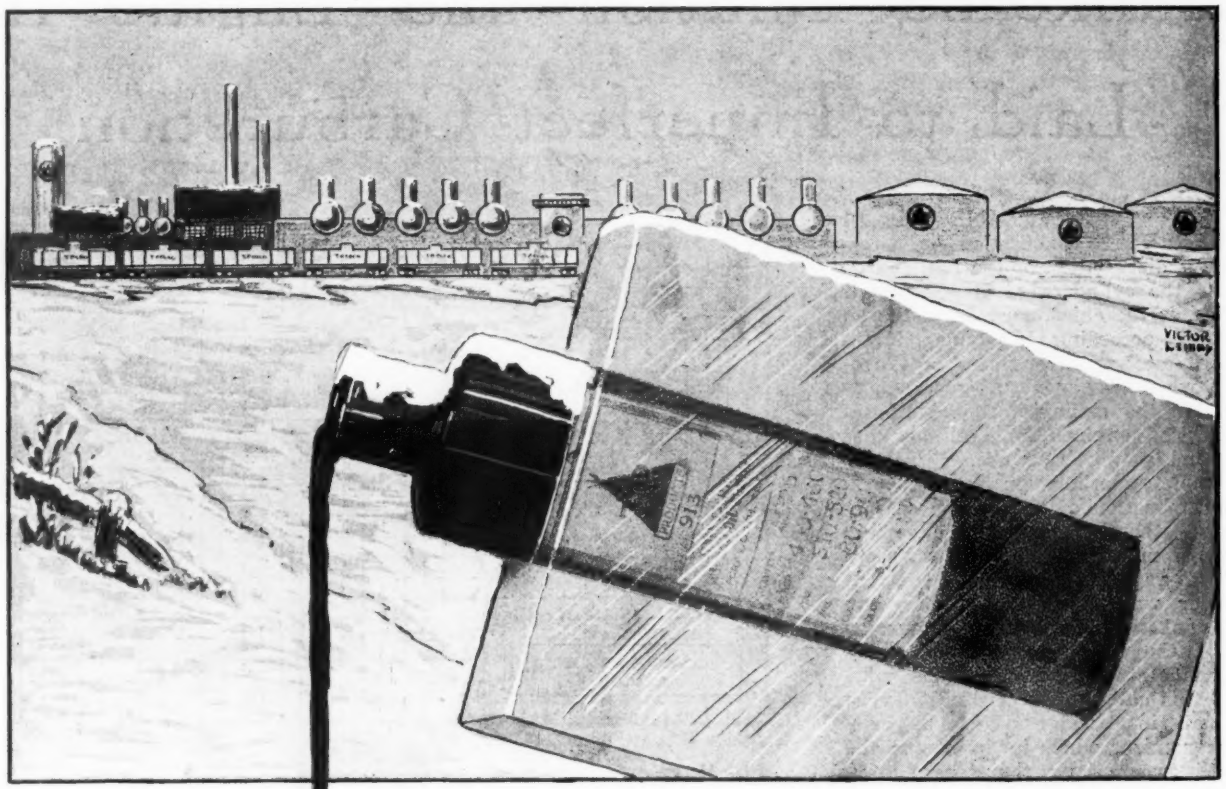
The device which resulted in the diminution of dilution is a small spiral nosed nozzle which creates turbulence in the riser, which, Mr. McIntosh says, results in so homogeneous a mixture of air and gasoline that there is no precipitation of gasoline on the cylinder walls during the compression stroke and the entire charge is consumed in the cylinder. There are no variations in the quality of the charge each cylinder receives, he says. This uniformity eliminates much of the torsional jerking, he contends.

A small tube leads from the nozzle to the upper part of the crankcase which acts as a ventilator for the crankcase. However, Mr. McIntosh claims the efficiency of the device is due entirely to the turbulence set up by the spiral nozzle insuring complete atomization of the charge, and not to the device's activity as a ventilator.

Mr. McIntosh lays to imperfect carburetion most of the ills of the automobile engine. Imperfect carburetion, he points out, causes dilution and incomplete combustion which means a deposition of carbon. Dilution results in lack of lubrication which means excessive wear. He has this to say of dilution:

"Starting a cold engine and excessive use of the carburetor choke with the gasoline of the usual grades cause dilution. The operation of the engine at reduced speeds and low velocities in the manifold is necessary with city driving. The same is true while idling at traffic controls and that is more evident when we consider that an over rich fuel ratio is essential to negotiate city conditions with no possible chance to work off the dilution with heat.

"Assume an engine capable of driving an auto at a speed of 60 miles an hour on a level. That means a manifold with an area sufficient to supply a charge at the ideal velocity to prevent fuel deposition with the throttle wide open. Assume a grade is encountered and the speed drops to 40 miles per hour and later another where the speed drops to 30 or 20 miles per hour and there is a desire (there always is) to make it on "high" even if it means going over at 5 miles per hour and all this work is done on full open throttle. What



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## *Reduces Blending Costs*
## *Increases Sales*

TP Low Cold Test Blending Bright stocks are getting these results for a rapidly growing list of prominent Jobbers and Blenders.

These products are from our own supply of 100% Pure Ranger Paraffin Crude—*run direct from the stills and containing all the hydrocarbons in an uninterrupted chain.* They are contact filtered and de Waxed by Super-Centrifuge.

A comparison of specifications, samples and prices will tell you *how* and *why* you should place your order immediately.

| 913 | | 915 | |
|---|---|---|---|
| Gravity | 24-25 | Gravity | 24-25 |
| Flash | 440-450 | Flash | 490-500 |
| Fire | 500-510 | Fire | 550-560 |
| Viscosity @ 210 | 80-90 | Viscosity @ 210 | 120-130 |
| Pour Test | 15-20 | Pour Test | 15-20 |
| Color | 7 NPA | Color | 8 NPA |
| Carbon residue | 1.3% max. | Carbon residue | 1.5% max. |

**TEXAS PACIFIC COAL AND OIL COMPANY**
FORT WORTH, TEXAS

happens in the manifold in reduced velocities?

"The same is true operating at less than maximum speeds under throttled control on a level. When we consider velocity as a factor for speed and power it is a hopeless failure at reduced speeds and powers.

"Velocity is necessary to produce atomization in the throat of a carburetor and, when the velocity drops, dilution starts. Thus the 'hot spot' is used in a way (the least efficient way) to prevent deposition of the fuel which tends to go into a rain and lose its identity as an efficient charge of mixture.

"Mixture stability and clean combustion means a charge must be 'cold' and as 'wet' as possible consistent with absence of fuel deposition and distribution troubles. Maximum power requires fast burning of the coolest possible mixture. A hotspot acts the opposite; where heat is required it fails; where it is not so essential it delivers maximum heat.

"Mixture stability is only possible where there is a high degree of atomization and that attained in a carburetor throat means little if it tends to return to less than a homogeneous mixture. Any heat that is used to compensate for deposition complicates control of a mixture and automatic control is an impossibility in an auto engine operating from 60 to 5 m.p.h. and if a manual control is fitted it is only a makeshift and usually it is not efficient (it seldom is), delivering the proper amount of heat to compensate for the loss due to drop in manifold velocity.

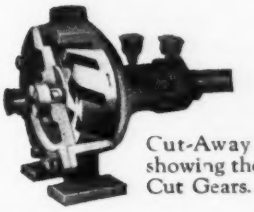
"There are two solutions for maintaining a mixture. One is to maintain the velocity by constant engine speed. The other is to produce a manifold that will deliver a constant velocity for any chosen speed. If there are four speeds use four carburetors and an equal number of manifolds.

"No one will claim that a carburetor and manifold large enough to supply an ideal mixture for a 100 H.P. engine at 2000 r.p.m. is ideal at 200 r.p.m. and that is what upsets atomization and distribution, resulting in imperfect combustion, dilution, carbon deposits and low efficiency both thermal and mechanical.

"Anything that tends to produce complete atomization or aids it in any way without resorting to added heat and is practically automatic in action, is a step in the right direction as a dilution eliminator it has been demonstrated."

---

Celite Products Co., Los Angeles, has off the press bulletin No. 339 on the use of Celite in concrete to improve workability, uniformity, water tightness and appearance of the concrete. A discussion of water-cement ratio control and the application of Celite when water-cement ratio control is employed, is included. What Celite is, how it is used and specifications covering its use, are included.

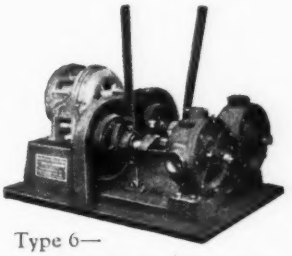



Cut-Away section showing the Helical Cut Gears.

## Takes Up Wear Automatically

THE end thrust produced by a helical gear is, in the Perfection Rotary Pump, applied to advantage in taking up the wear. The end thrust produced when the pump is first started will insure a close fit between the pump head and gears, thereby guaranteeing maximum suction even after the pump is old and worn. When the liquid begins to be forced through the pump, the pressure produced by it offsets the end thrust so that the pump will run free and easy with the least possible wear. This means less power required and longer life for the pump.

The helical (spiral) cut teeth in the rotor (see illustration of cut-away section) "shear" through the column of liquid at the intake and discharge ports, thus eliminating the shock and vibration so noticeable in other rotary pumps.



Type 6—
A twin gear drive unloading pump with motor.

The Perfection Rotary Pump is extremely smooth running and delivers a uniform flow.

If your old pumps are getting worn and losing efficiency, you will be money ahead by replacing them with Perfection Pumps. Ask for our Bulletin No. 271.

**Perfection Manufacturing Co.**
**2194 East Hennepin Avenue**
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# PERFECTION ROTARY PUMPS

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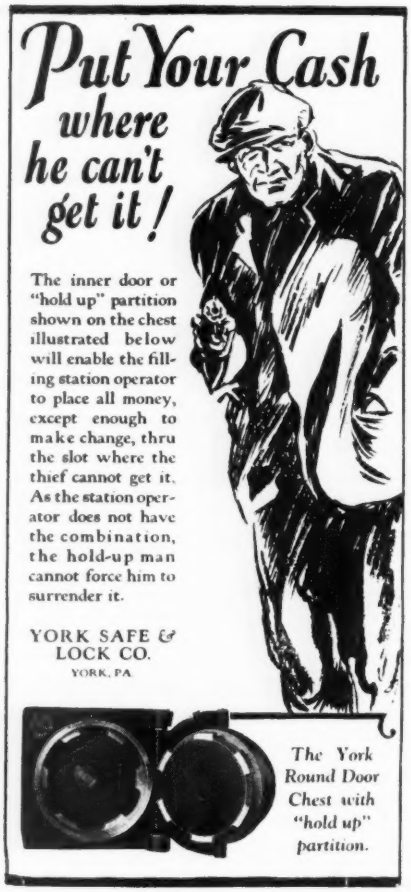
# KEROSENE

**All Gravities · Water White**

**TRACTOR FUEL**

**WILLOCK OIL CORPORATION**
**First National Bank Building · Phone Atlantic 3110**
**PITTSBURGH, PA.**

**52 Years Experience · It Counts**


Put Your Cash where he can't get it!
The inner door or "hold up" partition shown on the chest illustrated below will enable the filling station operator to place all money, except enough to make change, thru the slot where the thief cannot get it. As the station operator does not have the combination, the hold-up man cannot force him to surrender it.
YORK SAFE & LOCK CO.
YORK, PA.
The York Round Door Chest with "hold up" partition.

**The motorist *remembers* a clean filling station**

HE MAY forget all about a dirty filling station, but not a clean, attractive-looking one. He remembers — and comes back again.

It's easy to spruce things up with the help of an Oakite cleaning solution. Pumps, oil bottles and service cans are quickly brightened up; dirty, oily accumulations removed from concrete driveways. Oakite cleaning renews painted surfaces, too, and makes windows glisten.

Write for booklet telling how to make easy work of all your cleaning. Sent on request.

*Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada.*

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**OAKITE**
*Industrial Cleaning Materials and Methods*


# Become "Open Shop", Chicago Stations Urged

CHICAGO, Sept. 1

THE "open shop movement" has struck the filling station business in Chicago and appears to be taking hold. Station owners are being broadcast with postal cards decrying unionism and urging every owner to be boss of his own shop.

The big companies are not in on the move. Their service station salesmen are organized in the same union with their truck drivers. If they repudiated the union for salesmen they would, in all probability, precipitate a truck drivers' strike that would stop their tank trucks from running.

The situation is different with the private filling station owner, and he is a big factor in the business in Chicago. More than half the drive-in filling stations in the city are privately owned. They probably handle close to half the city's total gallonage. Moreover private stations are growing at a faster rate than company-owned stations.

The postal card publicity campaign, urging the owners of private stations to declare open shop are signed by the "Filling Station Owners of Chicago," a group never heard of before. No address is given and there is no hint in the trade as to who may be sending them out.

It is common knowledge that service stations are so numerous, gallonage so small and union wages so high that private station owners cannot all afford to pay their help the union scale. For a station owner to work 14 or 16 hours a day at his own place and use a school boy or a relative for relief, two to six hours a day, is not unusual. The union has been cognizant of this situation for about two years but has not attempted to interfere, having no way to regulate the acts of proprietors, or of part-time workers under legal age.

But the labor situation with these small operators is coming to a head rapidly. They are neither capital nor labor. Many of them would classify as family enterprises. The proprietor is the man of all work and the kid in the grease pit the heir apparent. As long as they can meet the oil jobber's monthly bill promptly and duck the pineapples of the labor racketeers, they remain Independent.

By virtue of being so Independent, some of these establishments cut prices. Consequently they have been the victims of a great many verbal assaults. But history is repeating itself and they are multiplying under oppression. Nearly every new station that springs up is a private station and, even now, Standard Oil Co. of Indiana is leasing out scores of its own stations to its own employes.

Nearly any trusted employe of the Standard can appeal to high authority and rent a service station. Like other oil companies, Standard owns some stations that are "lemons." High wages, short hours and small gallonage keep them in the red. But the employe has a chance to make them pay. He can throw away his union card, put his son or his young brother to work when not in school, and net more money between the Q.D.A. and the retail price than he could earn on wages. The rent for a station in a case like this is sometimes as low as $30 a month.

Thus the picture in Chicago is changing. Private service stations are becoming more numerous. Chain stations are not increasing in number. The labor union's grip on the sales force is slipping. Moreover it is not an arbitrary act on anybody's part, but the working of an economic set-up.

Some weeks ago the labor union took notice of the development for the first time. Labor organizers stated they were going to force the private filling station owner to employ union help. They proposed to do this by cutting off the station's gasoline supply if they refused to quit operating an open shop. This was not an idle boast. Unions could cut off the gasoline supply for any group of stations in Chicago if they so desired. The truck drivers are well organized and they would strike before they would deliver gasoline to stations called "unfair."

When Patrick J. Berrell, head of the oil workers union, declared war on the unorganized, price-cutting stations, he was a popular hero for a while. The union men applauded him and said, "Go on and make them hire union labor." The executives of big companies shrugged their shoulders and said, "We offer no brief to defend a price cutter." Even the operators of private stations who employ union help joined in to encourage "Paddy" Berrell to "Smoke out the price cutters who hire cheap labor."

Now there is a flare-back. Printed postal cards are showering down upon the private station owner as if from nowhere, telling him to stand up on his hind legs and thumb his nose at the union. There is no telling what they may do. Collectively they are a powerful factor, but they are not thoroughly organized. There are even some organizations among them that may fight the new "open shop group" if it becomes identified.

# Pierce Issues Stock To Pay Doherty

ST. LOUIS, Sept. 1.—Stockholders of the Pierce Petroleum Corp. have approved a charter amendment creating 11,500 shares of $6 no par preferred stock. This stock is redeemable at 102 at the rate of 1000 shares a year for 11 years and 500 shares the twelfth year.

The first 10 series of 1000 shares each are to be issued in settlement of certain litigations, claims and counterclaims, under settlement agreement dated July 23, 1928, between Pierce Petroleum Corp. and Pierce Oil Corp., jointly, and Henry L. Doherty, Cities Service Co., Empire Gas & Fuel Co. of Delaware, Empire Petroleum Co., and Empire Gas & Fuel Co. of Maine. The remaining 1500 shares, to be redeemed in 1939 and 1940, are to be used to pay expenses of litigations of the past 4½ years.

Pierce Petroleum states a reserve of more than $2,000,000 has been set up and has appeared from year to year as a liability on the balance sheets of Pierce Petroleum Corp., the bulk of which is on this account.

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**Bartles-Shepherd Opens Super Station**

WATERLOO, Ia., Sept. 4.—A super service station was opened here by the Bartles-Shepherd Oil Co. on Aug. 8. The station is of red brick with green tile roof. Wide drives, continuous flow gasoline pumps and air towers are features of the station. The grease station is at the rear, equipped with two grease and drain pits. A heating plant next to the grease station includes a hot water boiler and water softener, also steam for apparatus for thawing out frozen radiators and crankcases in the winter.

## Foreign Opportunities

Reserve ... tion may be obtained from the Bureau of ... n and Domestic Commerce, Washington, and its dist ict and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

33092.—**Gasoline and paraffin,** Hamburg, Germany, agency.

33094.—**Motor oils,** Alexandria, Egypt, agency.

33095.—**Cased gasoline and kerosene,** Hong Kong, China, agency.

33096.—**Light lubricating oils,** Guaymas, Mexico, agency.

33097.—**Petroleum products** (not specified) Para, Brazil, agency.

33098.—**Lubricating oils and greases,** Aguadilla, Porto Rico, agency.


# ZERO COLD TEST GEAR LUBRICANT

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TRADE MARK

FISKE'S

A HIGHLY developed—reasonably priced transmission and differential lubricant—operates easily with temperature *below zero*—a dark plastic lubricant designed to meet general conditions of automotive transmissions—will not harden in cold weather—thoroughly coats gears and *will not channel*—this is the ideal all season lubricant—keeps its consistency in all temperatures.

Packed in 400, 200, and 100 pound drums, also all size cans—200 and 400 pound drums are equipped with special 2" opening to handle pump.

We manufacture a full line of Lubricating Greases and Specialties.

***Write us for samples and prices.***

**FISKE BROTHERS REFINING CO.**

**24 State Street, New York, N. Y.**

NEWARK, N. J. *Works* TOLEDO, OHIO

## No Wonder He Was Satisfied!

"We are perfectly satisfied in every particular with the job turned out through your plant. It certainly makes us a wonderful delivery truck. We are pleased completely with Butler."

R. R. Pankey, Mgr.
PANKEY OIL COMPANY,
BROOKFIELD, MO.

APPEARANCE and durability are the two factors that made Mr. Pankey so delighted with his Butler Truck Tank, shown above.

Just note the attractive looks of this tank. The lines are bold and neat and will force attention! This tank is a moving advertisement for the Pankey Oil Company.

Durability is built into every Butler Tank. That's why a Butler Truck Tank that fell into an eight-foot ditch, fully loaded, down in Texas, did not spring a leak. It belonged to Sunoco. The same strength was shown when a truck owned by the City Oil Company, Iola, Kansas, broke a concrete wall after plunging four feet off the road and turning over. The Butler Truck Tank that was on the truck did not spring a leak.

### Other Butler Features

These advantages belong to Butler Truck Tanks: Bilged heads, bilged partitions, blue annealed copper steel, outside seams, triplex vent valves, welded-on can box, reinforced outlets, *adjustable sills*, lacquer enamel finish and other desirable features.

Send for illustrated circular describing all these advantages.

TRADE STEEL BUTLER PRODUCTS MARK

## Butler Manufacturing Company

**Kansas City, Mo. Minneapolis, Minn.**

*Butler Products include: Ready-Made Steel Buildings, Cans, Funnels, Buckets, Measuring Pumps, Truck Tanks, Underground Tanks, Storage Tanks, Bolted Tanks, Etc. Also pipe that can be used as conduit, double well casing or in other ways.*

# Roster of Oil Associations

National Petroleum News

American Association of Petroleum Geologists, Business Manager, J. P. D. Hull, Box 1852, Tulsa, Okla.

American Chemical Society, Petroleum Division, Mellon Institute, Pittsburgh, Pa. J. B. Hill, Atlantic Refining Co., 3144 Passyunk Ave., Philadelphia, Pa.

American Gas Association, Graybar Bldg., 420 Lexington Ave., New York City. Secretary Alexander Forward.

American Institute of Mining and Metallurgical Engineers, Petroleum Division. 29 West 39th St., New York. Chairman, Petroleum Section, A. W. Ambrose.

American Oil Burner Association, 350 Madison Ave., New York City. Executive Secretary, Leod D. Becker.

American Oil Chemist Society, 705 Tchoupitoulas St., New Orleans, La. Secretary-Treasurer, J. C. Helm.

American Oil Men's Association, 624 South Michigan Ave., Chicago, Ill. James A. Gilmore, Secretary.

American Petroleum Institute, 250 Park Ave., New York City. Secretary, R. L. Welch.

American Society for Testing Materials, 1315 Spruce St., Philadelphia, Pa. Secretary-Treasurer, C. L. Warwick.

Arkansas Petroleum Club, Secretary, James P. Lavery, Petroleum Supply Co., El Dorado, Ark.

Arkansas-Tennessee Oil Marketers Association, Secretary, R. E. McKellar, care Diamond Oil Co., Memphis, Tenn.

Association of Producers of Petroleum in Mexico, 17 Battery Place, New York. Director, Guy Stevens.

Association of Producers of Petroleum in Venezuela, 17 Battery Place, New York City. Director, Guy Stevens.

California Natural Gasoline Association, Los Angeles, Calif. Secretary, Paul D. Barton, 701 S. Palm Ave., Alhambra, Calif.

Chamber of Mines & Oils of California, Chamber of Commerce Bldg., Los Angeles, Calif.

Cincinnati Oil Club. Secretary, F. H. Dinkelmann, Eureka Oil Co., Cincinnati, O.

Detroit Petroleum Club. Secretary, Frank McSweeney, Cities Service Oil Co., General Motors Bldg., Detroit, Mich.

Eastern Kentucky Oil Producers Association, Ashland, Ky. Secretary, David Browning.

El Paso Petroleum Club. President, A. L. Behringer, Home Oil Co., El Paso, Tex.

Fire and Safety Marshals of the National Petroleum Association. Secretary, S. R. Brown, Mutual Refining Co., Warren, Pa.

Georgia-Alabama Independent Petroleum Marketers Association. Secretary-Treasurer, W. L. Moore, Wofford Oil Co. of Georgia, Atlanta, Ga.

Georgia Independent Oil Marketers Association. Secretary-treasurer, J. K. Ezell, American Oil Pump & Tank Co., P. O. Box 982, Atlanta, Ga.

Greater Chicago Oil Men's Club. Secretary, Mel Keim, Apex Motor Fuel Co., 4555 W. 26th St., Chicago, Ill.

Gulf Coast Independent Oil Producers Association, 403 Goggan Bldg., Houston, Tex. Secretary, T. L. Smith, Jr.

Illinois Petroleum Marketers Association. Secretary, G. A. Primm, Chamber of Commerce Bldg., Springfield, Ill.

Independent Oil Men of America, Engineering Bldg., 205 W. Wacker Drive, Chicago, Ill. Lou Harrington, Resident Manager.

Independent Oil Men's Association of Massachusetts. Secretary, F. E. Bergfors, care Quincy Oil Co., Quincy Adams, Mass.

Independent Oil Men's Association of New England. Secretary, I. H. Farrar, Berkshire Oil Co., Worcester, Mass.

Independent Petroleum Marketers of Middle Atlantic States. (Changed to Pennsylvania Independent Oil Men's Assoc.)

Indiana Independent Petroleum Marketers Association. Field Secretary, Sam T. Hurd, Hotel Severin, Room 306, Indianapolis, Ind.

Iowa Independent Oil Men's Association, 225 Fifth St., Des Moines, Ia. Secretary, M. L. Long.

Kansas Oil Men's Association, 423 First National Bank Bldg., Wichita, Kan. Secretary, J. A. Motter.

Kentucky Oil Men's Association, Inc., 610 Trust Co. Bldg., Lexington, Ky. Secretary, Thomas S. Scott.

Kentucky Petroleum Marketers Association, 1301 E. Main St., Louisville, Ky. Secretary, L. J. Connolly.

Maine Independent Oil Dealers Association. President, Theodore E. Emery, president, Kennebec Oil Co., Augusta, Me.

Michigan Independent Oil Men's Association, 207 West Franklin St., Jackson, Mich. Secretary and Treasurer, Wayne C. Hughes.

Mid-Continent Oil & Gas Association, 308 Tulsa Bldg., Tulsa, Okla. Secretary, Harry H. Smith.

Kansas-Oklahoma Division, 308 Tulsa Bldg., Tulsa, Okla. Secretary, Harry H. Smith.

Louisiana-Arkansas Division, American National Bank Bldg., Shreveport, La. Secretary, Joseph B. Elam.

Texas Division, Kirby Bldg., Dallas, Texas. Secretary, J. P. Laney.

Minnesota Petroleum Association, 638 Builders Exchange, Minneapolis, Minn. Secretary, Paul E. Hadlick.

Mississippi Oil Men's Association. Secretary, George B. Power, 501 Capital National Bank Bldg., Jackson, Miss.

Missouri Oil Men's Association, 370 Board of Trade Bldg., Kansas City, Mo. Secretary, George S. Allee.

National Association of Independent Oil Producers, 414-419 Ritz Bldg., Tulsa, Okla. President, William H. Gray.

National Gasoline Dealers Association, Inc., 280 Madison Ave., New York City. Secretary, Thomas P. McKee, Jr.

National Petroleum Association, Munsey Bldg., Washington, D. C. Washington Counsel, Fayette B. Dow.

Natural Gas Association of America, 905 Oliver Bldg., Pittsburgh, Pa. Secretary, Guy F. Batchelor.

Natural Gas & Petroleum Association of Canada, Chatham, Ont., Canada. Secretary, S. A. Morse.

Natural Gasoline Association of America, 305 Tulsa Bldg., Tulsa, Okla. Secretary, A. V. Bourque.

Nebraska Independent Oil Men's Association, 816-817 Terminal Bldg., Lincoln, Neb. Secretary, C. M. Sutherland.

New Jersey Oil Trade Association, 196 Halsey St., Newark, N. J. Secretary, J. H. Chambers.

New York State Oil Producers Association, Wellsville, N. Y. President, Lewis H. Thornton.

New York State Petroleum Marketers Association, 1201 So. Salina St., Syracuse, N. Y. Secretary, Benjamin A. Javitz.

North Carolina Independent Oil Jobbers Association, Greensboro, N. C. Secretary-Treasurer, L. H. Martin, L. H. Martin, Inc., Greensboro, N. C.

North Central Ohio Petroleum Club, 489 Cherry St., Marion, O.

North Dakota Petroleum Association. Acting head, H. M. Wilson, care International Oil Co., Minot, N. D.

Northwest Independent Oil Association. Secretary, C. H. Brown, care Arro Oil & Refining Co., Lewiston, Mont.

Northwestern Pennsylvania Oil Producers Association, 78 Main St., Bradford, Pa. President, A. Edward Booth.

Ohio Gas & Oil Men's Association, 811 First National Bank Bldg., Columbus, O. Secretary, William H. Thompson.

Ohio Petroleum Marketers Association, 508 Ohio State Savings Bldg., Third and Gay Sts., Columbus, O. Executive Secretary, W. A. Milne.

Oil Trade Association of Baltimore, Md. Secretary, Arthur B. Gardner, 309 East Falls Ave., Baltimore, Md.

Oil Trade Association of Philadelphia, Inc. Secretary, Howard M. Rogers, 123 Arch St., Philadelphia, Pa.

Oil Trades Association of New York City, Inc., 35 So. William St., New York City. Secretary, Joseph C. Smith.

Oklahoma Oil Jobbers Association, 416 Fidelity National Bank Bldg., Oklahoma City, Okla. Manager, Secretary and Treasurer, Arthur J. McClelland.

Oklahoma Oil Marketers, Inc., P. O. Box 755, Enid, Okla. Secretary, W. W. Blackburne.

Okmulgee District Oil & Gas Association, Okmulgee, Okla. Secretary, Charles I. O'Neill.

Osage Oil & Gas Lessees Association, 505 Cosden Bldg., Tulsa, Okla. Secretary, Harry H. Smith.

Pennsylvania Grade Crude Oil Association, 209 Chambers Bldg., Oil City, Pa. Secretary, R. J. Alexander.

Pennsylvania Independent Oil Men's Association, 601 Keystone Bldg., Harrisburg, Pa. Secretary, R. A. Overholser.

Pennsylvania Retail Gasoline Dealers' Association, Altoona, Pa. Secretary, A. W. Martin.

Petroleum Club of Central New York. Secretary, George R. Casey, Crown Oil Co., Syracuse, N. Y.

Petroleum Independent Electrical Association. Secretary, H. E. Browne, Prairie Pipe Line Co., Independence, Kans.

Petroleum Motor Transport Association. President, Roy F. Fike, Mid-Continent Petroleum Corp., Cosden Bldg., Tulsa, Okla.

Pierce County Independent Gasoline & Oil Dealers Association. Executive Secretary, J. H. Stine, 1009½ Pacific Ave., Tacoma, Wash.

Purchasing Agents Association of Tulsa, 307 So. Cincinnati St., Tulsa, Okla. Secretary-treasurer, H. M. Cosgrove.

Rocky Mountain Independent Oil Men's Association (formerly Colorado Petroleum Club), 411 Exchange Bldg., Denver, Colo. Secretary, A. Oberholtz, Jr.

Rocky Mountain Oil & Gas Association, P. O. Box 1559, Casper, Wyo. Secretary, C. W. Sparr.

Rocky Mountain Oil & Gas Association, Montana Chapter, 222 Ford Bldg., Great Falls, Mont. Secretary, Walter F. Brittan.

South Dakota Independent Oil Jobbers Association, Sioux Falls, S. D. Secretary, F. H. Buehler, care Dacotah Oil Co., Madison, S. D.

Southeastern Missouri Oil Marketers Association. Secretary, E. C. Smith, Kelso Oil Co., Cape Girardeau, Mo.

Southeastern Ohio Oil & Gas Producers Association, Logan O. Secretary, W. L. Franks.

St. Louis Petroleum Club, 1430 So. Vandeventer Ave., St. Louis, Mo. Secretary, R. F. Leinberger, Blackmer Pump Co., St. Louis, Mo.

Springfield Petroleum Club, Secretary, Ross Lock, c/o Lock Bros., Oil Co., Springfield, Ill.

State Executives Club. Secretary, Paul E. Hadlick, Minnesota Petroleum Association, 638 Builders Exchange, Minneapolis, Minn.

Tank Car Association, 1015, 139 N. Clark St., Chicago, Ill. Manager, J. Arthur Kealy.

Technical Club of Oklahoma, 208 Fisher Bldg., Tulsa, Okla. Secretary, R. I. Ginter.

Tennessee Independent Oil Men's Association. Secretary, G. B. Dickey, Benzol Gas Corp., Nashville, Tenn.

Texas Independent Oil Men's Association. Secretary, L. A. Greene, care Radio Petroleum Co., Forth Worth, Tex.

Virginia Independent Oil Men's Association, 511 Union Trust Bldg., Petersburg, Va. Secretary-treasurer, M. B. Whiting, Whiting Oil Co., Clifton Forge, Va.

West Virginia Oil and Natural Gas Association, Fairmont, W. Va. Secretary-Treasurer, Edwin Robinson.

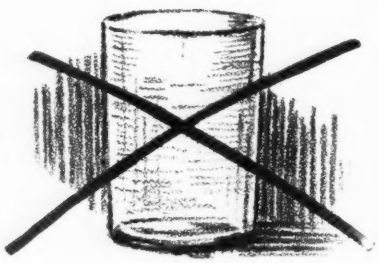
West Virginia Oil Marketers Association, 513 Peoples Exchange Bank, Charleston, W. Va. Secretary and Treasurer, D. E. Frierson.

Western Petroleum Refiners Association, Tulsa, Okla. Managing Director, Howard Bennette.

Western Reserve Petroleum Club. President, R. C. Heil, Commercial Oil Co., 2545 E. 83rd St., Cleveland, O.

Wisconsin Petroleum Association. Secretary, H. A. Rohde, Rohde-Deuster-Hinkley Oil Co., West Allis, Wisc.

Wyoming Petroleum Club. Secretary, G. H. O'Donnell, 847 So. Lincoln St., Casper, Wyo.



# Good-bye grimy glass —*say hundreds of filling stations*

"Better let a customer go on his way still hot and thirsty than to offend him with a grimy glass of questionable history."

That, in substance, is the thought that made one large marketer throw the community glass into the discard and equip a large chain of stations with clean, crisp, inviting Burt Cups.

No other service that you can offer is more appreciated than this—yet unlike other free services the cost of Burt Cups is almost negligible.

Most economical of open cups, yet most practical and serviceable of them all, the Burt Cup is more widely used for drinking-water than any other. To win new friends for this tested cup we are making the liberal offer as stated on the coupon below. Remember that with each order for 5000 cups you receive a—

*Handsome dispenser* **FREE**

This dispenser is loaned to you as long as you use Burt Cups. If, for any reason, the Burt service does not measure up to your full expectations you pay only for the cups actually used. Let Burt Cups prove their case at once.

**THE VORTEX MFG. CO., 421 N. Western Ave., Chicago**

**MONEY BACK**

The Vortex Mfg. Co., 421 N. Western Ave., Chicago
Check one:
☐ Please send 5000 Burt Cups.
Price $12.50 subject to following liberal terms: With these cups I am to receive a Burt dispenser free and it is understood that my money will be refunded if I choose to return cups or dispenser within 10 days from date received (except cost of cups actually used). Cups will be shipped through nearest distributor. This means quite a saving in shipping costs.
☐ Send additional facts about Burt Cups.

Firm.....
Individual.....
Street and number.....
City and state.....
Number of filling stations operated.....

N.P.9

# Burner Association Lists Six Oils

CLEVELAND, Aug. 30.—Uniform specifications for burner oil for domestic and industrial use have been accepted by the American Oil Burner Association. The gravity designation of fuels for oil burners has been unsatisfactory to everybody, burner manufacturer, refiner and user and the present accepted specifications are the result of three years of effort carried on with the cooperation of the American Petroleum Institute and Committee D-2 of the American Society for Testing Materials.

According to Harry F. Tapp, assistant secretary of the American Oil Burner Association, the Underwriters Laboratories are now listing burners submitted to them for investigation as suitable for fuels specified in the uniform specifications instead of designating the fuel by gravity.

Six grades of oil are listed in the uniform specifications. Their characteristics and methods of testing follow:

## Uniform Oil Specifications

Name—Oil No. 1—Furnace Oil—Light

Scope 1. This specification covers a light distillate oil for use in burners where a high grade fuel is required.

Properties 2. This oil shall conform to the following requirements: It shall be a hydrocarbon oil free from water, acid, grit and fibrous or other foreign matter likely to clog or injure the burner or valves.

(a) Flash Point:
Minimum—*Legal or (Pensky-Martens Closed Tester) ..... 110° F
Maximum — (Pensky-Martens Closed Tester) ..... 165° F
(b) Water and Sediment, maximum... Trace
(c) Four Point, maximum ..... 0° F
(d) Distillation Test:
When 10 per cent has been collected in the receiver the thermometer reading shall not exceed ..... 420° F
The end point shall not be higher than ..... 600° F

Methods of Testing 3. The properties enumerated in these specifications shall be determined in accordance with the following methods of test of the American Society for Testing Materials, except as specified in Paragraph (a).

(a) Flash Point:
*Minimum—The instrument and method for determining minimum flash point shall be that legal for the locality in which the oil is sold. In absence of legal requirements the minimum flash point shall be determined in accordance with the Standard Method of Test for Flash Point by means of the Pensky-Martens Closed Tester (Serial designation D 93).
Maximum—Standard Method of Test for Flash Point by means of the Pensky-Martens Closed Tester (Serial Designation D 93).
(b) Water and Sediment:
Standard Method of Test for Water and Sediment in Petroleum Products by Means of Centrifuge (Serial Designation D 96).
(c) Pour Point:
Tentative Method of Test for Pour Points of Petroleum Products (Serial Designation D 97—27 T).
(d) Distillation Test:
Standard Method of Test for Distillation of Gasoline, Naphtha, Kerosene, and Similar Petroleum Products (Serial Designation D 86).

Name—Oil No. 2—Furnace Oil—Medium

Scope 1. This specification covers a grade of or distillate oil for use in burners where a high grade fuel is required.

Properties 2. This oil shall conform to the following requirements: It shall be a hydrocarbon oil free from water, acid, grit and fibrous or foreign matter likely to clog or injure the burner or valves.

(a) Flash Point:
Minimum—*Legal or (Pensky-Martens Closed Tester) ..... 125° F
Maximum — (Pensky-Martens Closed Tester) ..... 190° F
(b) Water and Sediment, maximum... Trace
(c) Pour Point, maximum ..... 0° F
(d) Distillation Test:
When 10 per cent has been collected in the receiver the thermometer reading shall not exceed ..... 440° F
When 90 per cent has been collected in the receiver the thermometer reading shall not exceed ..... 620° F

Methods of Testing 3. The properties enumerated in these specifications shall be determined in accordance with the following methods of test of the American Society for Testing Materials, except as specified in Paragraph (a).

(a) Flash Point:
*Minimum—The instrument and method for determining minimum flash point shall be that legal for the locality in which the oil is sold; in absence of legal requirements the minimum flash point shall be determined in accordance with the Standard Method of Test for Flash Point by means of the Pensky-Martens Closed Tester (Serial Designation D 93).
Maximum—Standard Method of test for Flash Point by means of the Pensky-Martens Closed Tester (Serial Designation D 93).
(b) Water and Sediment:
Standard Method of Test for Water and Sediment in Petroleum Products by Means of Centrifuge (Serial Designation D 96).
(c) Pour Point:
Tentative Method of test for Pour Points of Petroleum Products (Serial Designation D 97—27 T).
(d) Distillation Test:
Tentative method of Testing Gas Oils (Serial Designation D 158—25 T).

Name—Oil No. 3—Furnace Oil—Heavy

Scope 1. This specification covers a grade of oil generally known to the trade as light fuel oil intended for general industrial consumption, and for use in burners where a medium grade low viscosity fuel is required.

Properties 2. This oil shall conform to the following requirements: it shall be a hydrocarbon oil free from water, acid, grit and fibrous or foreign matters likely to clog or injure the burner or valves.

(a) Flash Point:
Minimum—*Legal or (Pensky-Martens Closed Tester) ..... 150° F
Maximum — (Pensky-Martens Closed Tester) ..... 200° F
(b) Water and Sediment, maximum.... 0.1 %
(c) *Pour Point, maximum ..... 0° F
(d) Distillation Test:
When 10 per cent has been collected in the receiver the thermometer reading shall not exceed ..... 460° F
When 90 per cent has been collected in the receiver the thermometer reading shall not exceed ..... 675° F
(e) Viscosity, Saybolt Universal at 100° F Maximum ..... 55 seconds

Methods of Testing 3. The properties enumerated in these specifications shall be determined in accordance with the following methods of test of the American Society for Testing Materials.

(a) Flash Point:
*Minimum—The instrument and method for determining minimum flash point shall be that legal for the locality in which the oil is sold. In absence of legal requirements the minimum flash point shall be determined in accordance with the Standard Method of Test for Flash Point by means of the Pensky-Martens Closed Tester (Serial designation D 93).
Maximum—Standard Method of Test for Flash Point by means of the Pensky-Martens Closed Tester (Serial Designation D 93).
(b) Water and Sediment:
Standard Method of Test for Water and Sediment in Petroleum Products by Means of Centrifuge (Serial Designation D 96).
(c) Pour Point:
Tentative Method of Test for Pour Points of Petroleum Products (Serial Designation D 97—27 T).
*The maximum pour point shall be 0° F except for localities where the average temperature between October 1st and May 1st is 40° F or above in which case the pour point may be plus 15° F.
(d) Distillation Test:
Tentative method of Testing Gas Oils (Serial Designation D 158—25 T).

Name Oil No. 4—Fuel Oil—Light

Scope 1. This specification covers a grade of oil generally known to the trade as light fuel oil intended for general industrial consumption. It is for use in burners adapted to a medium grade, medium viscosity fuel.

Properties 2. This oil shall conform to the following requirements: it shall be a hydro-

carbon oil free from water, acid, grit and fibrous or other foreign matters likely to clog or injure the burner or valves.

(a) Flash Point:
Minimum—(Pensky-Martens Closed Tester) ..... 150° F
Maximum — (Pensky-Martens Closed Tester) .....250° F
(b) Water and Sediment, maximum .... 1.0 %
(c) Pour Point, maximum ..... 15° F
(d) Viscosity, Saybolt Universal at 100° F maximum ..... 125 seconds

Methods of Testing 3. The properties enumerated in these specifications shall be determined in accordance with the following methods of test of the American Society for Testing Materials:

(a) Flash Point:
Standard Method of Test for Flash Point by Means of the Pensky-Martens Closed Tester (Serial Designation D 93).
(b) Water and Sediment:
Standard Method of Test for Water and Sediment in Petroleum Products by Means of Centrifuge (Serial Designation D 96).
(c) Pour Point:
Tentative Method of Test for Cloud and Pour Points of Petroleum Products (Serial Designation D 97—27 T).
(d) Viscosity:
Standard Method of Test for Viscosity of Petroleum Products and Lubricants (Serial Designation D 88).

Name—Oil No. 5—Fuel Oil—Medium

Scope 1. This specification is similar to and covers a grade of fuel oil listed in the United States Government Specifications as Bunker Fuel Oil "B". It is suitable for burners adapted to low grade oil of medium viscosity.

Properties 2. The oil shall conform to the following specifications: it shall be a hydrocarbon oil free from grit, acid and fibrous or other foreign matters likely to clog or injure the burner or valves. If required it shall be strained by being drawn through filters or wire gauze of 16 meshes to the inch. The clearance through the strainer shall be at least twice the area of the suction pipe and the strainers shall be in duplicate.

(a) Flash Point: — (Pensky-Martens Closed Tester) ..... 150° F
(b) Water and Sediment, maximum.... 1.0 %
(c) Viscosity Saybolt Furol at 122° F maximum ..... 100 seconds

Methods of Testing 3. The properties enumerated in these specifications shall be determined in accordance with the following methods of test of the American Society for Testing Materials.

(a) Flash Point:
Standard Methods of Test for Flash Point by means of the Pensky-Martens Closed Tester (Serial Designation D 93).
(b) Water and Sediment—Standard Method of Test for Water and Sediment in Petroleum Products by Means of Centrifuge (Serial Designation D 96).
(c) Viscosity:
Standard Method of Test for Viscosity of Petroleum Products and Lubricants (Serial Designation D 88).

Name—Oil No. 6—Fuel Oil—Heavy

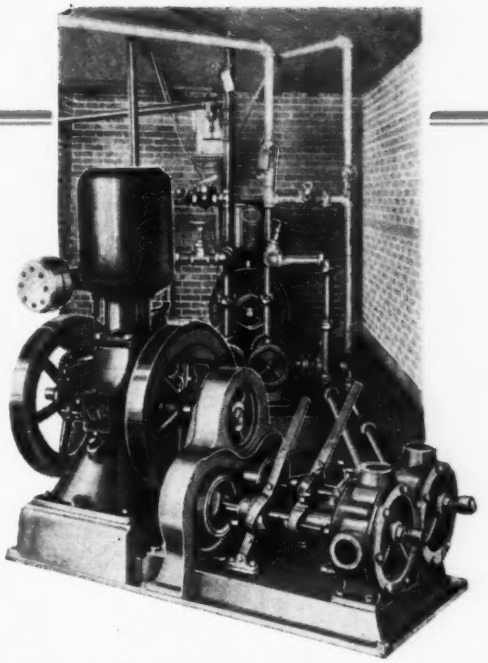
Scope 1. This specification is similar to and covers a grade of fuel oil listed in the United States Government Specifications as Bunker Fuel Oil "C". This oil is suitable for burners that are adapted to a low grade of fuel oil of high viscosity.

Properties 2. The oil shall conform to the following specifications: It shall be a hydrocarbon oil free from grit, acid, and fibrous or other foreign matters likely to clog or injure the burner or valves. If required it shall be strained by being drawn through filters or wire gauze of 16 meshes to the inch. The clearance area of the suction pipe and the strainers shall be in duplicate.

(a) Flash Point:
Minimum — (Pensky-Martens Closed Tester) ..... 150° F
(b) Water and Sediment, maximum.... 2.0 %
Sediment, maximum ..... 0.25 %
A deduction in quantity will be made for all water plus sediment in excess of 1.0 per cent.
(c) Viscosity, Saybolt Furol at 122° F maximum ..... 300 seconds

Methods of Testing 3. The properties enumerated in these specifications shall be determined in accordance with the following method of test of the American Society for Testing Materials:

(a) Flash Point:
Standard Method of Test for Flash Point by Means of the Pensky-Martens Closed Tester (Serial Designation D 93).
(b) Water and Sediment:
Standard Method of Test for Water in Petroleum Products (Serial Designation D 95—27) (U. S. G. S. S. Method 300.11) U. S. Government Standard Specification Method 300.2 for Sediment.
(c) Viscosity—Standard Method of Test for Viscosity of Petroleum Products and Lubricants (Serial Designation D 88).

## Engine Driven Viking Twin

It is not always possible to have either electricity or steam at hand to operate a pump, hence this Engine Driven Twin Viking. This type is made in three sizes with capacities of 50, 90 and 200 gallons per pump per minute. Both pumps in the set are direct connected through machine cut cast iron gears and are equipped with friction clutches—either pump may be operated independently or both at once, and two different kinds or grades of oil may be handled at the same time. This is one of the most popular types of Viking pumping units. Catalog (new) and Special Oil Pump circular may be had for the asking. Write today to Viking Pump Co., Cedar Falls, Iowa or Walkerville, Ontario, Canada, and get the Viking facts before you install a pump of any kind.

VIKING PUMP CO., CEDAR FALLS, IOWA
Walkerville, Ontario, Canada

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WHEN YOU WANT QUALITY AND REASONABLE PRICES

*Mixed Carload in Drums—or Tank Cars*

"INVINCIBLE" MOTOR OILS

"CASTOR-OI" (BEAN CASTOR BLEND) MOTOR OIL

100% Pennsylvania or Western Blends

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# This book will help you plan your filling stations

**Motorists, more and more, prefer to purchase their gasoline and oil at trim, efficient looking places. A well planned station is a trade asset—progressive marketers recognize this fact and supplement good pumps with proper surroundings.**

**For many years Gilbert and Barker Manufacturing Company has manufactured pumps and station equipment which is recognized by the trade as the last word in accuracy and service. This has led to a careful study of filling station design as a proper setting for its equipment. In cooperation with a capable architect we have designed a number of artistic and practical stations to help you decide on the type of station best suited to your needs. Plans, plot layouts, color schemes, pump locations have been compiled in a new booklet—Attractive Filling Stations —which we will gladly send you with our compliments. Write today for your copy.**

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MANUFACTURING COMPANY
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SPRINGFIELD MASS. U.S.A.

*Visible Gasoline Pumps, mechanical measure or sight measure, hand or air operated, equipped with the famous* **NULTRA** *bowls. Also piston type pumps, with visible discharge. Pump and tank outfits for motor oils, including the popular* **"NARRO-LUBE"** *type. Special pipe sealing compound for gasoline and oil pump and tank installations.*

# The Editors' Viewpoint

National Petroleum News

## Intelligent Sales Promotion

INTELLIGENT persistence in sales work, the business world has found, is the only way to make such work really profitable, and under the head of "sales work" come all forms of sales promotion, including advertising.

The oil companies that have intelligently and continually told their natural public of the value of their goods and the quality of their service and so on, are the ones that have prospered the most. Those companies that have advertised, no matter in how small a way, but who have advertised continually have prospered thereby.

But still a number of business men today make their sales promotion work spasmodic. They advertise this week or this month and then pass it up for a month or for a year. They overlook the fact that every day they have customers dying and every day there are new customers growing up from young womanhood and young manhood to the years of sufficient earning power to be customers.

Paul E. Faust, president of Mitchell-Faust Advertising Co., wrote on this subject the other day the following sermon which every oil man may well study:

"The work of the veteran is that he selects the method or the medium which in his judgment promises the greatest benefit and then concentrates sufficient advertising energy (brains plus dollars) to assure the end he has in view. It is only the man who has not thoroughly learned the lesson of adequacy who attempts to make a thousand dollars accomplish a five-thousand dollar task or dissipates a budget that could do one thing well in a vain attempt to cover five objectives. It is the latter man who assures his associates in the business world that 'Advertising doesn't pay—I know for I've tried it.'" —W. C. P.

## Banks Don't Understand Oil Business

MEMBERS of the oil industry, third in wealth and among the great industries of the United States, wonder why more attention is not paid to their industry by the banks, large and small, of the country.

A wheat grower in the wheat country finds that his banker is familiar in detail with his problems and business. The same can be said of the cotton farmer, to even a greater degree. The cattle man can discuss his problems with his banker and depend upon an intimate understanding of his troubles or good fortune.

But the oil man usually must travel far before he finds a banker with a real understanding of the oil business. In the oil centers of the United States, with the possible exception of Tulsa, the cashier of practically every bank is woefully ignorant of the oil business. In fact, most of them throw up their hands when the conversation turns to oil. And if the oil man wants a loan he has to furnish collateral that the banker understands.

It would seem that great banks would be justified in establishing a special department to give attention to the oil industry and the oil man. The smaller bank could designate one official who would make an intimate study of this great industry.

One little incident years ago in Texas, when the rice-growing industry was in its infancy, a small banker carrying a lot of "rice" paper, wanted the help of a larger bank. He approached a large banking house in Galveston and stated his needs. The banker did not know what he was talking about and in a humorous manner remarked, "Are you talking about rice paper?" and went through the motion of rolling a cigaret. The small town banker felt that a big banker doing business in a section where a young industry was trying to walk after crawling for two or three years should keep better posted.

This parallels the lack of understanding of the oil business on the part of many important bankers. When they think of the oil industry, they many times recall the great promotion days and regard the industry as a get rich quick scheme. They do not realize the size of the industry. They never think of the number of men employed in all its branches. The bankers could be a great help to the oil man, and the oil man would be of real assistance to the banker.

If the bankers do not wake up to their opportunity, they will find that the oil industry will gradually get into the banking business in self defense. The conjecture is not a dream by any means. It's a possibility.—W. E. G.

## Small Savings Make Big Totals

RULE of thumb methods and dependence on memory have been replaced with scientific buying and detailed records in the centralized purchasing departments of the various oil companies. Tremendous savings have been made possible, not only by concentrating purchasing power but also by developing information that permits avoidance of dead stocks. Comparatively small savings on individual purchases combine to reach a large total over the period of a year.—P. W.

## These "Damned" Corporations

WHEN the average politician damns a corporation, he always overlooks the fact that the corporation is not a living individual in itself, but is made up of a few hundred, or a thousand, or a few hundred thousands of individuals—very much like himself. In many cases they may be thriftier and have laid by a few dollars with which they bought the stock in these "damned" corporations.

Furthermore what this politician of the flannel-mouth seldom realizes, is that these days half the stock in the big corporations is held by women. We can't say definitely as to oil companies, but as the percentage runs true in a score of other leading companies, it undoubtedly runs the same with the big oil companies.

In a tabulation recently made by the New York Evening Post the American Telephone & Telegraph Co. leads all others with 54 per cent of its stock held by

(*Continued on Page* 100)

# Aviation has Advanced

## — Its fuel consumption has already reached huge figures

Turn back a page of time. How many planes did you see in the sky a year ago? How many planes will you see next year or five years hence?

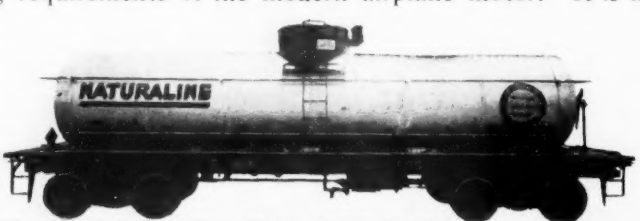
"Are you aware of this New Major Market for Motor fuel which is looming on the horizon?"

When one airplane lands at the airport in your town as much gasoline is taken aboard as an average dozen motor cars at your service stations.

Let your vision then calculate the volume that aviation offers you.

Among pilots Naturaline is probably the best known brand of aviation fuel on the market.

This new super-aviation motor fuel has been built entirely from Natural gasoline to meet the exacting requirements of the modern airplane motor. It is now being rapidly distributed through our new dealersorganization under an exclusive dealers franchise.

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Naturaline is also a wonderful medium for blending a premium grade anti-knock, quick-starting, smooth-running fuel for motor cars.

*Actual photograph of two hundred and eighteen airplanes in mass formation over San Diego.*

By courtesy of San Diego Chamber of Commerce.

# Naturaline choice of Pilots

"This is the finest aviation gasoline we have used and will certainly aid tremendously in the development of aeronautics".

***Harry Rogers,***
***Rogers Airlines, Inc.***

"I wish this fuel were available at every airport in the country".

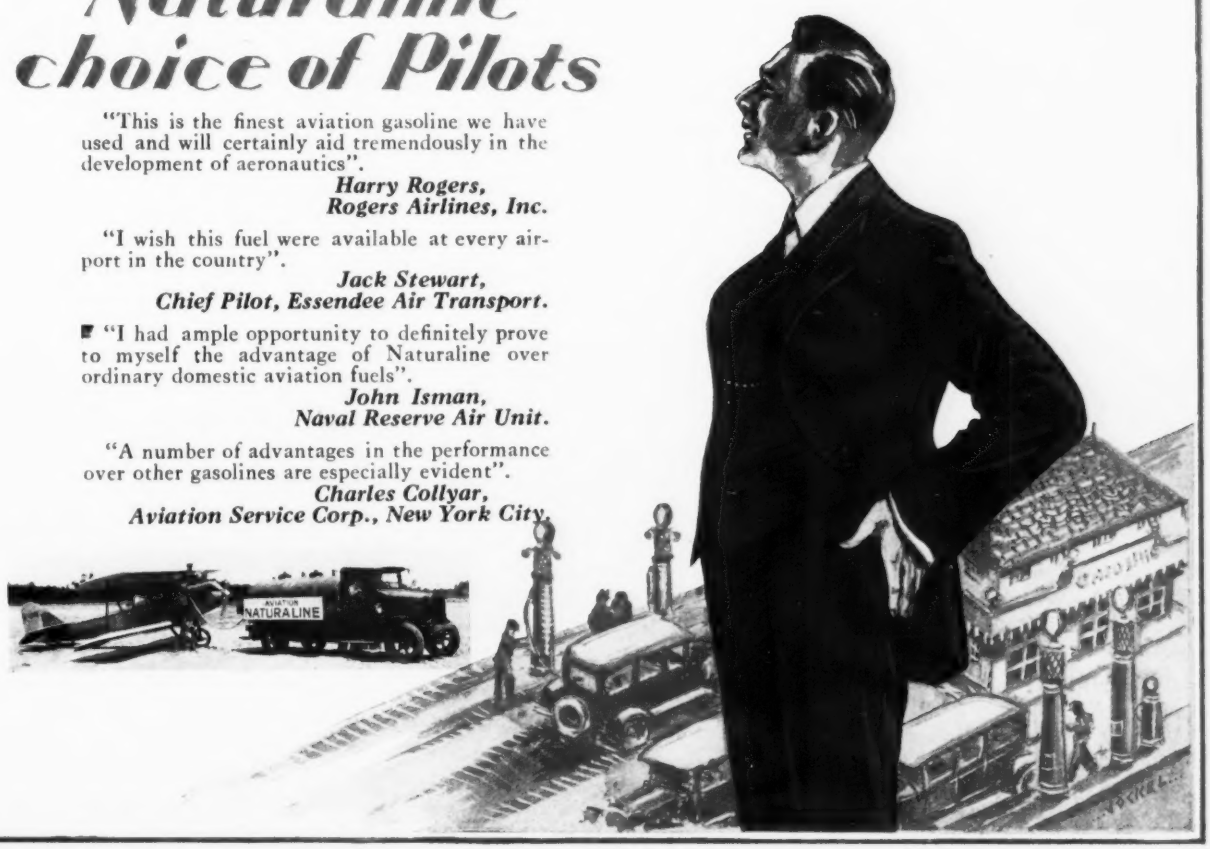
***Jack Stewart,***
***Chief Pilot, Essendee Air Transport.***

"I had ample opportunity to definitely prove to myself the advantage of Naturaline over ordinary domestic aviation fuels".

***John Isman,***
***Naval Reserve Air Unit.***

"A number of advantages in the performance over other gasolines are especially evident".

***Charles Collyar,***
***Aviation Service Corp., New York City.***



(*Continued from Page 97*)

women. Next is the National Lead Co., then the Westinghouse Air-Brake Co. The Pennsylvania Railroad has more than 50 per cent. The big Du Pont interests in Delaware have almost 40 per cent of their stock held by women. Of the General Electric stock 47 per cent is owned by women.

Some of the big oil companies have appreciated this in recent years and have begun to do a good job of telling the public of the humanness of all their stockholders; that they live just around the corner from the man who is throwing most of the bricks.—W. C. P.

## Wildcat Drilling Disfavored

THE point is made by production men that no operator should get into any wildcat "spread" of acreage whose expiration date is a comparatively short time away —six months to a year. With conditions in the oil industry as they now are, high production and large proven reserves, exploratory work must be held at the lowest possible figure. Long term leases, taken on terms that will permit of the greatest latitude in the matter of drilling, are the only ones that should be considered.

There has been a sharp cessation of the business of buying protection acreage in blocks where a test is promised for the immediate future. The oil companies have done much by their refusal to buy acreage or to contribute money to the drilling of tests near their acreage to the stoppage of wildcatting. Quite a few drilling contracts are still hanging over the heads of the companies and individuals who assembled blocks before overproduction set in, hence wildcatting will go on, but at a constantly decreasing rate.

The thing that will contribute most to the stoppage of unneeded exploration work is the insistence of every man who takes a new lease that it be for at least 10 years and the refusal of every company who buys into a "spread" to make the purchase if it contributes to the starting of a test well in the near future.—L. E. S.

## Stamp Out Budding Unionism

THE so-called union movement is seemingly spreading to the dry-cleaning and cartage business in cities outside of Chicago. This should be watched by the oil industry, because it may indicate what the industry may expect if the unions pursue vigorously their announced policy of unionizing the refining and marketing divisions.

Every one, of course, is familiar with conditions in Chicago, where the so-called union movement has gotten under the control of hy-jackers and one either joins the union or gets into serious trouble physically.

In Detroit, the weekly newspaper, the Detroit Saturday Night, has been campaigning against similar roughwork in the organization of the dry cleaners and tailors.

This so-called unionizing is being pursued in Cleveland, according to the American Plan Association of Cleveland. This association calls attention to the story in Collier's Weekly of April 12, this year, by Owen P. White on "Looting the Loop", depicting conditions in Chicago.

Of conditions in Cleveland, the American Plan Association says:

**Protect Cleveland**

"At the present time the wholesale dry cleaning industry in Cleveland is operating under a system imported from Chicago. As the first move in establishing this plan the drivers of all of the companies in the group were forced to join the union. Then, according to unwilling victims of the system—the small tailor shops which send out their dry cleaning work to the wholesale cleaners, the city was divided into fixed zones, and the drivers given strict orders to accept work only from the tailor shops in their particular zone. The obvious result of this is that the tailor, in order to get his work done, is forced to send it to the dry cleaning company allotted the territory in which he does business.

"To combat this situation a group of tailors formed their own dry cleaning company. Shortly after this company was formed and put in operation a number of new stores were opened in various sections of the city near the establishments of these tailors where cut rates on dry cleaning were offered. The prices charged by these new establishments were in some cases as low as one-half the prevailing price. Then a truck belonging to the newly formed dry cleaning company of the tailors was seized, driven out on Canal road and it and its contents burned. As a result of this ruinous price cutting and intimidation the group of tailors was forced to sign an agreement with the union and observe the rules of the wholesale group.

"Within the past two weeks we have been informed of a proposal to establish Chicago conditions in the moving business. The owner of a large Cleveland cartage company went to Chicago upon the invitation of promoters of the proposed racket in order that he might be shown how the system operated in that city. He learned that in Chicago no moving job can be done for less than forty dollars, regardless of the amount of goods to be moved or the distance of the haul. Possibly the recent series of attacks upon open shop cartage companies in Cleveland, in which several garages and trucks were burned and emery dust placed in the crank cases of trucks represents the campaign of terrorism that has preceded so many of the Chicago rackets.

"The one-man plumbing contractors of Cleveland, of which there are about one hundred, are facing an attempt on the part of the Union to put them out of business because of their refusal to comply with the terms of the agreement between the larger closed shop contractors and the Union. A large group of these contractors have filed affidavits with this association showing that they are being harassed by business agents of the Union who have informed them that they must not do any work themselves but must employ union men to do it for them. Their complaint was carried to U. S. District Attorney A. E. Bernsteen, who has promised an investigation of the case.

"If Cleveland is to be protected from the establishment of conditions similar to those existing in Chicago, constant vigilance must be exercised by every employer and citizen."

It well behooves every oil man to watch the situation regarding his business closely, because he may have to decide whether he or the so-called unions will run his business. And the time for the oil man to make the decision is NOW, and the time for him to enforce the decision is ALL THE TIME, not after trouble has come.

As NATIONAL PETROLEUM NEWS has shown by many articles, regardless of the high ideals claimed by unions, they have been restrictive of production, and some unions particularly, have not hesitated at anything to enforce their unjustified, illegal and criminal demands. —W. C. P.

# THE FASTEST VISIBLE

Fills In 20 Seconds
Drains In 20 Seconds

Astral Glass Bowls
Make Gas Look Like Crystal

Biggest Value On The
Market—Wet or Dry Hose

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Design

A Revelation In Ease Of
Operation, Speed and
Satisfaction

Meets Requirements
Of All States

Commanding, Dignified
Appearance Attracts
Trade

Used By More Than
1000 Oil Companies

PRICES

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|---|---|
| Type 585—Hand—Bottom Up Serve | $112. |
| Type 625—Hand—Top Down Serve | 117. |
| Type 586—Motor—Bottom Up Serve | 170. |
| Type 626—Motor—Top Down Serve | 175. |

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Milwaukee, Wisconsin
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**MILWAUKEE**
The Pump of Compulsory Accuracy

# Oil Company Attorneys Aid in Drafting Model Gasoline Tax Measure

CLEVELAND, Aug. 31

THE North American Gasoline Tax Conference, which meets Oct. 1, 2 and 3 at Memphis, will discuss and probably vote on a model gasoline tax measure which has been drafted by the conference's legislative committee since the meeting of the conference a year ago.

The object of the model law is to provide a statute that will have clarity, efficiency, justice and equality, according to a synopsis of aims published in the conference's bulletin.

The legislative committee was headed by Edward Martin, auditor general of Pennsylvania. Associate members of the committee representing the oil industry, are Frank E. Packard, Standard Oil Co. of Indiana; James J. Cosgrove, The Texas Corp., and W. J. Guthrie, Gulf Oil Corp.

The model law provides for a tax on sales of gasoline but it is probable that some opposition to this feature will arise at the Memphis convention. A tax on sales is more cumbersome than one levied on gasoline received by the distributor. The former, however, provides more political jobs because the checking of the tax will of necessity be more difficult.

Provision is incorporated for the payment of the tax every three months, instead of monthly as is done at present in most states. It is probable that this feature may be changed because payment of the tax monthly is regarded by some of the leaders among the tax officials as more feasible.

R. A. Hopkins, assistant budget officer of Montana, has raised this objection in a letter to William A. McAtee, state inspector of oils of Missouri, who is president of the conference. Mr. Hopkins points out that in his state the tourist season is short, that many dealers set up business to serve the tourists, and quit business and depart when the tourist season is over. They are in a position to evade the tax, although they might have collected it from the tourists, if payment is made only every three months.

Under the model law taxes are due when the quarterly reports are filed with the state tax commissions and the commissions are made collectors of the tax. A penalty of 10 per cent is provided for delinquencies.

The tax commission is empowered to fix the amount of tax due if it is not satisfied with the return made by a taxpayer, in this case the oil company. The taxpayer may appeal. If the taxpayer has made no return the commission can assess an amount against him from which assessment he cannot appeal.

A corporation or person failing to pay a tax may be fined not more than $1000 and an officer of the corporation or an individual dealer may be imprisoned not more than six months.

Because a tax on sales is provided and not a tax on imports or receipts, there is no provision for outage claims or tax collection costs.

The model law provides that one sixth of the tax receipts shall be credited to the county where the tax was collected, for the construction, maintenance and repair of roads, and that five-sixths shall go into an unspecified fund. This could be the state highway fund or any other fund the legislatures of the various states might designate.

The amount of the tax is left to the individual states.

Of course this model law will not be binding on any state but will be a pattern for state legislatures to use in enacting or amending gasoline tax laws.

## Text of Proposed Model Gasoline Tax Statute

AN ACT.

Imposing a State Tax on liquid fuels including all liquids ordinarily, practically and commercially usable in internal combustion engines for the generation of power and all distillates of and condensates from petroleum, natural gas, coal, coal tar and vegetable ferments so usable and sold or used in this State by distributors, importers and consumers as in this act defined, providing for the filing of certificates by distributors, importers and consumers, and for the collection of said tax and its distribution, and providing penalties.

SECTION 1: Be it enacted, etc. . . . That the term "liquid fuels" shall mean all liquids ordinarily, practically and commercially usable in internal combustion engines for the generation of power and shall include all distillates of and condensates from petroleum, natural gas, coal, coal tar and vegetable ferments, said distillates and condensates being ordinarily designated as gasoline, naphtha, benzol, benzine and alcohols so usable but not restricted to such designations.

The word "distributor" as used in this act shall be construed to include all persons, copartnerships, joint-stock associations, corporations and companies who or which produce or refine or manufacture or compound liquid fuels as defined in this act, within this state for use, distribution, or sale and delivery, within this state.

The word "importer" as used in this act shall be construed to include all persons, copartnerships, joint-stock associations, corporations and companies who or which import or cause to be imported into this state liquid fuels as defined in this act for use or distribution or sale and delivery, in and after the same reaches this state.

The word "consumer" as used in this act shall include all persons, copartnerships, joint-stock associations, corporations and companies, importing or causing to be imported into this state for his or its own use, liquid fuels as defined in this act after the same reaches this state, and also all persons, copartnerships, joint-stock associations and companies who or which purchase liquid fuels in this state in original packages from importers as defined in this act for his or its own use and upon which no tax is paid under the provisions of this act by the importer.

SECTION 2: All distributors, importers and consumers of liquid fuels in the state of ..... engaged in selling or using liquid fuels at the time this act shall go into effect shall within thirty days thereafter, and all distributors, importers and consumers of liquid fuels engaging in such sale or use thereafter, shall prior thereto file a duly acknowledged certificate with the State Tax Commission on a form prescribed, prepared and furnished by him which shall set forth the name under which such distributor, importer, or consumer transacts or intends to transact such business within the state of ....., and the place of business of such distributor, importer or consumer, and if such distributor, importer or consumer has more than one place of business within this state, the address of the principal place of business within this state; if such distributor, importer or consumer is a firm, copartnership, or association, the names and addresses of such persons constituting such firm, copartnership or association, and if a corporation the names and addresses of the principal officers thereof.

No distributor, importer or consumer as herein defined shall after the date this act becomes effective sell or use any liquid fuels until such certificate is filed as required by this act, nor shall any distributor, importer or consumer engaging in such business subsequent to the passage of this act, commence such business without first filing such certificate with the State Tax Commission; provided, however, that nothing contained in this section shall be construed to require the filing of any such certificate for liquid fuels brought into this state in original packages as interstate commerce sales.

Any distributor, importer or consumer failing to comply with the provisions of this section shall be guilty of a misdemeanor and upon conviction thereof shall be sentenced to pay a fine of not less than one hundred dollars ($100.) or more than one thousand dollars ($1,000.)

SECTION 3: A state tax of ..... cents a gallon or fraction thereof is hereby imposed on all liquid fuels sold and/or used in this state by distributors, importers and consumers, except upon sales of liquid fuels in original packages brought into this state in interstate commerce. The taxes hereby provided for shall be paid by the distributors, importers and consumers selling and/or using liquid fuels into the state treasury in the manner and within the times herein specified.

For the purpose of ascertaining the amount of the tax it shall be the duty of every distributor, importer and consumer to transmit to the State Tax Commission upon a form prescribed, prepared and furnished by it, a statement or return under oath or affirmation of the liquid fuels sold and/or used by such distributor, importer or consumer during the preceding three months ending the last days of March, June, September and December of each year, which statement or return shall be filed with the State Tax Commission on or before the last days of January, April, July and October of each year, and shall show the number of gallons of such liquid fuels sold and/or used and taxable within the state during the said periods, and such further information as the State Tax Commission shall prescribe. If any such distributor, importer or consumer shall neglect or refuse to make said statement or return as herein required and provided, an addition of ten per centum of the

amount of tax shall be added and collected on an account settled as hereinafter provided.

SECTION 5: Every distributor, importer and consumer at the time of making the reports required by section 4 of this act shall pay to the state treasurer the amount of tax due for the period covered by such reports.

SECTION 6: The State Tax Commission, or any agent appointed in writing by it, is hereby authorized to examine the books and papers of any distributor, importer or consumer, pertaining to the liquid fuels made taxable by this act to verify the accuracy of any statement or return made under the provisions of this act. Any information gained by the State Tax Commission or any other person as a result of the reports, investigations or verifications herein required to be made, shall be confidential. Any person divulging such information shall be guilty of misdemeanor and upon conviction thereof shall be sentenced to pay a fine of not more than one thousand dollars ($1,000.) or to undergo imprisonment of not more than one year or both.

SECTION 7: If the State Tax Commission is not satisfied with the statement or return made by any distributor, importer or consumer under the provisions of this act, it is hereby authorized and empowered to settle an account against such distributor, importer or consumer based upon the facts contained in the statement or return, or upon any information within its possession or that shall come into its possession, with the right to the distributor, importer or consumer dissatisfied with the settlement made against him to appeal therefrom in the manner now provided by law for appeals from the settlement of public and tax accounts. If any such distributor, importer or consumer shall neglect or refuse to make the statement or return as required by this act, the State Tax Commission may estimate an assessment against such distributor, importer or consumer, and settle an account for taxes, penalty and interest thereon from which settlement there shall be no right of appeal.

SECTION 8: Any distributor, importer or consumer who shall fail, neglect or refuse to make the settlements or who shall refuse to permit the State Tax Commission or any agent appointed by it, in writing to examine the books or papers of any such distributor, importer or consumer pertaining to the liquid fuels taxable by this act or who makes any incomplete, false or fraudulent statement or return hereunder, or who does, or who attempts to do anything whatsoever to avoid a full disclosure of the amount of such business done or liquid fuels used or to avoid the payment of the whole or any part of the tax due shall be guilty of a misdemeanor, and on conviction shall be sentenced to pay a fine not exceeding one thousand dollars ($1,000.), or in the case of an individual or the officer, member or employe charged with the duty of making such report for an association, copartnership or corporation to undergo imprisonment not exceeding six months, or both. Such penalty shall be in addition to the penalty imposed by any other section of the act.

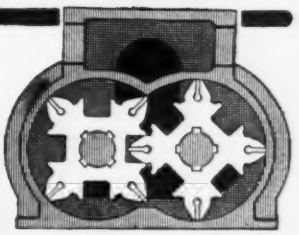
SECTION 9: Sixteen and two-thirds per centum of all taxes collected under the provisions of this act shall be credited to the county where the tax was collected and shall be used only for the purpose of the construction, reconstruction, maintenance and repair of roads and highways, and for the payment of the interest on county bonds issued for road purposes, and shall be paid over to such county semi-annually on the first day of August and February of each year. The remaining eighty-three and one-third per centum of said tax shall be paid into the ..... fund, and the same is hereby specifically appropriated for the same purpose as said ..... fund is appropriated by the provisions of existing or future laws.

SECTION 10: The provisions of this act are severable, and if any of its provisions shall be held unconstitutional, the decision of the court shall not affect or impair any of the remaining provisions of the act. It is hereby declared as a legislative intent that this act would have been adopted had such unconstitutional provisions not been included herein.

SECTION 11: That an act approved the ..... is hereby repealed; provided, however, that nothing herein contained shall be taken or construed to relieve any person or persons, copartnership, association, company, or corporation, whatsoever, from the payment of any tax, interest or penalty due or owing to the state under any law in force at the time this act becomes effective.

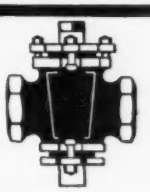
SECTION 12: This act shall take effect on the first day of 192....


NORTHERN
ROTARY
PUMPS



"MORE GALLONS PER HORSE POWER"

NORTHERN
DOUBLE PACKED
VALVES



BALANCED - LUBRICATED
CAN'T STAY STUCK - CAN'T KEEP LEAKING

NORTHERN PUMP CO.
MINNEAPOLIS, MINN.
OFFICES IN ALL PRINCIPAL CITIES



"—I WILL MOVE THE EARTH"

CENTURIES ago Archimedes said, "Give me where to stand, a lever and a rock and I will move the earth". Rather a simple feat, provided, of course, the equipment for such a stupendous task was furnished by someone else.

We, here at Youngstown, make no such provisions when receiving an order to build a tank. Just tell us what you want and we will, figuratively speaking, move the earth to provide for your requirements. Equipment is the least of our worries. If you require a 400-gallon tank or an 80,000 barrel storage plant, we will revise Archimedes' statement to read, "Give us the order and watch us produce".

*Write for a free Copy of Bulletin No. 15.*

THE YOUNGSTOWN BOILER & TANK COMPANY
YOUNGSTOWN, OHIO

*Offices in Principal Cities*

Youngstown TANKS
"KEENE STANDARDIZED MADE"

**Bottle Fold Type Folio**

Your Name in Gold Free

Complete with Bottle Fold and Bottles *only* **$15.30**

**364—A very complete and practical folio made from heavy 5-oz. black cowhide. 3¼-inch pocket that holds leather handled bottle fold. Contains sixteen 4-oz. plain bottles. One-inch pocket for stationery. Leather case containing six ½ oz. jars $3.25 additional.**

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*Builders of Sales Luggage*

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Guaranteed 100% PURE PENNSYLVANIA OIL

***Finest Grades of 100% Pure Pennsylvania Products***

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FUEL OIL
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Our 30 years of experience is our guarantee to you of the finest and best products that can be produced.

*Let us quote on your requirements.*

*Write—Wire—Phone*

**Superior Oil Works**
**Warren, Penna.**


# ON THE LAZY BENCH

National Petroleum News

CONSOLATION

Josiah Bentley, a rich but eccentric resident of Cow Hollow, died and the young minister called to console the widow.

"Do not grieve, my dear Mrs. Bentley," said he. "The body that we so sadly interred is but a husk; an empty shell. The nut has gone to heaven!"

*—Our Sun*

* * *

**Hint Not Enough**

The following was heard in a leafy darkness of wooded slope above the promenade:

"I thought you were going to kiss me when you puckered up your lips just now."

"Now-er-that is—it was only a piece of grit in my mouth."

"Then for goodness sake swallow it, you need it."

*—The Loreco Diamond.*

* * *

"Never do that again, John."

"Heh?"

"Never honk for me to come out of church."

*—Barnsdall.*

* * *

Yes! One way for a girl to keep your youth is not to introduce him to a nicer girl.

*—The Pure Oil News.*

* * *

Barber: "Have you been here before? I don't remember your face."

Customer: "No, you wouldn't. It altered greatly as it healed."

*—Stanolind Record*

* * *

Ruby: "Have you heard the story that's going around about Eunice?"

Muriel: "Heard it? Why, honey, I started it."

*—Skelly News.*

* * *

"What's a hamlet, Daddy?"

"A place with only ten or twelve filling stations."

*—The Pure Oil News.*

* * *

Old Maid—And son, why do you like day light saving time the best?

Young Boy—Cause it gives me an extra hour on this all day sucker.

*—Loreco Diamond*

* * *

"Now, I'm getting into the game," said the tadpole, as the wild duck swallowed him.

*—The Pure Oil News.*

* * *

She (dreamily): How smoothly it runs, George, when you shut off your engine.

*—Skelly News.*

TOO LATE

A small boy had acquired a habit of swearing. For this reason he became unpopular with the mothers of other children, and was often sent home from youthful gatherings in disgrace.

He returned one evening half an hour after he had set out to a party, and his father, assuming the usual cause, asked no questions, but chastised him with vigor.

"And now," he said, finally, "what was it you said? Why did they send you home at this time?"

"They sent me home," replied the smarting child, "because the damn party's to-morrow night."

*—Loreco Diamond*

* * *

The proprietor of a large business house bought a number of signs reading "*Do It Now*" and had them hung around the office, hoping to inspire his people with promptness and energy in their work. In his private office one day soon afterward a friend asked him how the scheme affected the staff.

"Well, not just the way I thought it would," answered the proprietor. "The cashier skipped with $20,000; the head bookkeeper eloped with the private secretary; three clerks asked for an increase of salary, and the office boy lit out to become a bandit."

*—Skelly News*

* * *

**"Sy" Said**

A fat man has one advantage over his thin brethren. He knows exactly where his cigar ashes are going to fall.

*—The Pure Oil News.*

* * *

EXPLAINED

A recent college graduate applied, in a local butcher shop, for a job. The butcher looked him over carefully, and then said: "We need an energetic young man to run the slicing machine. Have you had any experience?"

"I used to play golf!"

*—Loreco Diamond*

* * *

"Dearest, I must marry you."

"Have you seen father?"

"Often, honey, but I love you just the same."

*—The Marion Line*

* * *

"I'm leaving for Chicago tonight. I'm supposed to get married tomorrow."

"Where, in Chicago?"

"No, here, in New York."

*—Barnsdall.*

# Chicago Post Office In Market Again

CHICAGO, Sept. 1.—The Chicago post office is advertising for bids from refiners to supply its gasoline requirements during the fourth quarter of 1928. It will need 290,000 gallons, more or less, in that three months. Arthur C. Lueder, postmaster, advises that bids will be received up to Sept. 5, and then opened publicly.

This interesting bit of business develops every three months. It usually goes to a Group 3 refiner or to a marketer supplied from Group 3 because (unlike other Chicago buyers) the post office can save money by it. The post office, along with other government departments enjoys "land grant rates" which are especially liberal between Oklahoma and Chicago. It amounts to approximately 1 cent a gallon from Oklahoma but would be nearly nothing from refineries on the Great Lakes or points east.

The Chicago post office has its own tank trucks but no storage. The refiner usually agrees to rent the post office a bulk storage tank in Chicago, unload its tank cars, load its tank trucks and avoid demurrage, all for a service fee.

## New Stations Building

**Mt. Gilead, O.**—Cities Service Oil Co., filling station.

**Portsmouth, O.**—C. B. Wellman, filling station.

**Delphos, O.**—Ed Morris, super service station.

**Willow City, N. D.**—Standard Oil Co. of Indiana, filling station.

**Bourbon, Ind.**—Lewis Perry, filling station.

**Cedar Falls, Ia.**—Shell Co., filling station.

**Boone, Ia.**—Herschel Williams, filling station.

**Minatare, Neb.**—Z & W Garage, filling station and garage.

**Minneapolis, Minn.**—Denker-Running Co., filling station.

**Delaware, O.**—William McElfresh, super service station.

**Toledo, O.**—Arthur and Andrew Johnson, filling station.

**Newton Falls, O.**—Home Oil Co., filling station.

**Marshalltown, Ia.**—Corn Belt Oil Co., filling station.

**Olivia, Minn.**—Standard Oil Co. of Indiana, filling station.

**Minneapolis, Minn.**—John C. Mercer, 1932 S. 10th St., Omaha, filling station.

**Wheaton, Minn.**—Fred Wheeler, filling station.

**Pocahontas, Ia.**—Pocahontas Oil Co., filling station.

**Waterloo, Ia.**—Dr. J. D. Cecil, filling station.

**Alma, Neb.**—Standard Oil Co. of Nebraska, filling station.

**Nebraska City, Neb.**—Guy A. Crook, filling station.

**Rittman, O.**—Bob Wenger, filling station.

**Bucyrus, O.**—Columbus Oil Co., filling station.

**Livingston, Mont.**—The Texas Co., filling station.

**Oberlin, O.**—Janby Oil Co., filling station.

**Farmington, Ill.**—James H. Fash, filling station.

**Kingston, N. Y.**—William Harp, Jr., and Conrad Robinson, filling station.

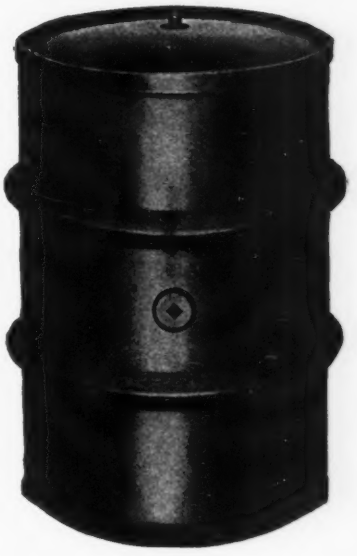
*Why does he look at the label?*

NOT one man in a thousand possesses expert knowledge that qualifies him to pass critical judgment on a suit of clothes. He has neither time nor the inclination to be an expert on the infinite number of articles he buys.

In his mind that label is a warranty of value—a personal promise of complete satisfaction from the manufacturer. He takes it for granted that the manufacturer whose name appears on the label knows his business. So he buys on confidence.

And the confidence of the buying public has become so integral a part of the success of manufacturer that he dare not jeopardize it by slighting value.

The American Steel Package Company was founded on the ideal of manufacturing a product identified with a high degree of value and during years of manufacture we have constantly strived to add to the esteem in which Defiance Steel Barrels are held among buyers in the oil field.



THE AMERICAN STEEL PACKAGE CO.
Defiance, Ohio

**DEFIANCE**
*Distinguished for Honest Value*

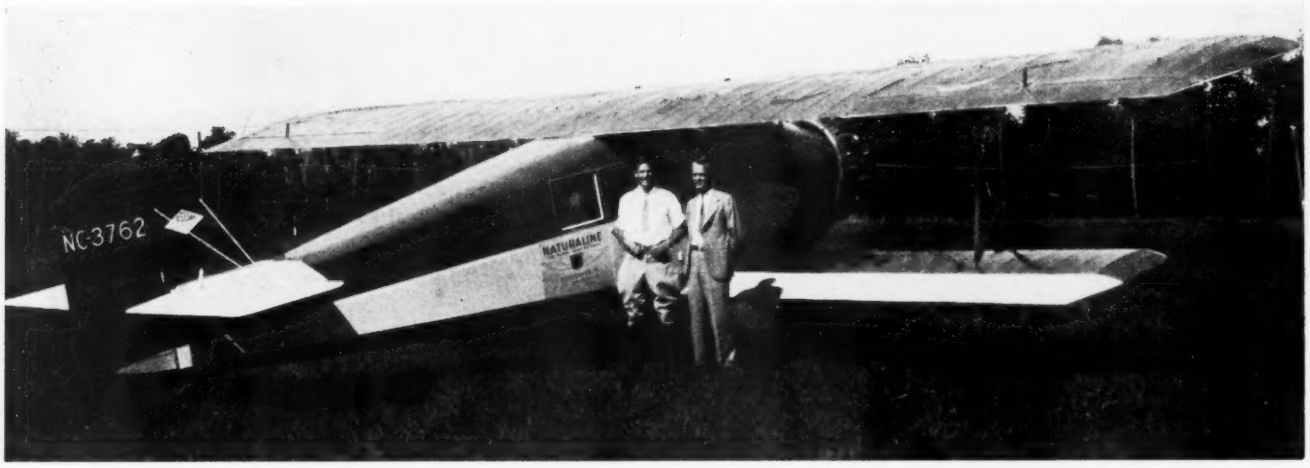
## Bring New Customers and Hold Your Old Ones

ALLISON COUPON BOOKS
*Accurate—Compact—Convenient*

Popularize the coupon book habit at YOUR filling stations. Sales organizations, truck fleets and individual drivers prefer this plan once they try it. Allison Coupon Books are absolutely accurate. Furnished in stock or special designs. Send for samples and prices.

**Allison Coupon Company**
Indianapolis, Indiana
*Coupon Book Specialists Since 1888*

# Naturaline Company Buys Airplane




*Buhl Airsedan purchased by the Naturaline Co. of America for research and sales promotion work. Lieut. Alexis Klotz, pilot, and Fred Foster, Naturaline salesman, are by the plane*

TULSA, Aug. 31.—To aid in its research program and in sales promotion of "Naturaline", the Naturaline Co. of America, subsidiary of the Chestnut & Smith Corp. and affiliated companies, has purchased a Buhl Airsedan which has just been delivered. The plane is a cabin ship of the sesquiplane type powered with a 220 horsepower Wright Whirlwind motor.

Special instruments have been added to the regular equipment for the purpose of compiling flight data to aid the Bureau of Standards in its investigation of vapor lock in connection with airplane motor fuels. The Naturaline company is co-operating with the bureau in the present research program recently announced. The special instruments include a barometer, wet and dry bulb thermometers and a series of five thermocouples installed in the gasoline feed lines from supply tank to carburetor jet.

The purpose of the special equipment is to ascertain and record the changes in gasoline temperatures between the source of supply and the carburetor jet in actual flight when the gasoline is subjected to rapidly changing temperature and pressures resulting from differences in altitude.

Daily reports covering data obtained in flight will be furnished the Bureau of Standards for checking against experimental results obtained by the bureau in its laboratories which are equipped with apparatus for artificially creating similar conditions.

There is a great deal of difference between vapor locking in the carburetor of a motor car and in the carburetor of an airplane. In the case of the motor car the driver may be disgusted but in the case of the plane tragedy might result, particularly if the vapor locking occurred just after a take-off.

D. E. Buchanan, of the Naturaline and Chestnut & Smith companies, believes that vapor locking is impossible with Naturaline, the product his company makes from natural gas by a system of careful fractionation. No instances have occurred in the past two years of flight trials. The proposed research work is designed to determine specifications of fuels which will allow sufficient volatility and at the same time insure against vapor lock under all conditions.

The Naturaline plane has been equipped as a flying office for use in sales promotion work. In the separate cabin for passengers which is built to accommodate four persons comfortably, Fred Foster, Naturaline salesman, has installed a folding typewriter desk, has provided some filing space and compartments for stationery. Special stationery has been prepared for use in the flying office which shows under the letter-head that the letter is "Written from aerial office aboard plane 'Naturaline' and airmailed from—."

Lieut. Alexis Klot is pilot of the new plane. He has a separate driving compartment in the plane which protects passengers from the noise of motor operation. An accompanying photograph shows the new plane "Naturaline."

## Theater Named for Drake Opens in Oil City

OIL CITY, Sept. 4.—Perpetuation of Colonel Drake's name outside of the oil industry has been assured with the opening in August of the Colonel Drake Theater in Oil City.

Fitting ceremonies heralded the opening of the theater, which took the place of the regular Drake Day celebration. A musical diversion depicting the spirit of the oil country, along with the more romantic screen exhibition entitled "Love's Springtime" were features of the first performances.

Many oil companies producing, refining or marketing in this territory took advantage of this opportunity to congratulate the theater management through whole page newspaper advertisements, at the same time getting the attention of the motoring public to their products.

The third floor of the theater is occupied by the executive offices of The Pennzoil Co.

### Atlantic to Increase Capital

NEW YORK, Aug. 31.—Expansion of the properties of the Atlantic Refining Co. and acquisition of other interests will be enabled if the company's stockholders Oct. 15 approve the plan to increase the common stock from $50,000,000 to $100,000,000. It also is proposed to reduce the par value of the common stock from $100 to $25 a share and exchange new stock for old on a 4 for 1 basis. However, no expansion plans have been announced.

### Canadian Output Falls

WASHINGTON, Sept. 3.—July production of automobiles in Canada, as reported to the Department of Commerce by the Dominion Bureau of Statistics, was as follows: Passenger cars, 20,122, trucks, 5104, as compared with production in June of 25,341 passenger cars and 3058 trucks, and production in July, 1927, of 8719 passenger cars and 2268 trucks.

# Rapidayton - A Name Every Marketer Knows

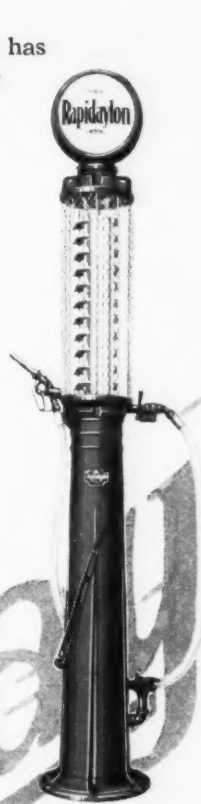
EVER since RAPIDAYTON Pumps first appeared on the market RAPIDAYTON has been a synonym for excellence in gasoline dispensing equipment. You know the RAPIDAYTON name and reputation, better perhaps than any other name in the field. But are you aware that you can now buy RAPIDAYTON pumps at about the same prices you would expect to pay for average pumps?

Large scale production by the most modern precision methods has brought RAPIDAYTON quality within the reach of every marketer, large or small.

A complete line of RAPIDAYTON pumps—blind and visible, eye or mechanical measurement, wet or dry hose—is now available at the lowest prices ever placed on RAPIDAYTON equipment. Many refinements have been added to these famous pumps . . . . detailed descriptions will interest you.

*A new catalog tells the whole story.*
*Send the coupon for your copy.*

**The Dayton Pump & Mfg. Co.** Dept. G-2
**Dayton, Ohio, U.S.A.**
*Sales Representatives in Principal Cities.*




*Cut 625 — An eye measurement pump with the tall glass cylinder required by law in some states.*

*The Bell Boy. Famous for speed and durability. UNISHOT Lubrication optional.*

*Cut 600 — Simple, positive, rapid. Accurate eye measurement. Wet or dry hose.*

*Cut 650 — A visible model with positive mechanical measurement. Does everything but think.*

Rapidayton
TRADE MARK REG. U.S. PAT. OFF.

CLIP.....FILL OUT.....MAIL

The Dayton Pump & Mfg. Co.
Dayton, Ohio, U. S. A.
Dept. G-2

Gentlemen: Please send me the new RAPIDAYTON catalog

Name .....

Address .....

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# How to Correct Oil Gravity and Volume For Temperature Changes

Part 1

CLEVELAND, Aug. 30

THREE points in determining physical properties of petroleum products frequently cause trouble to members of the oil industry.

Probably the chief harm done by erroneous procedure in determining these three points is the friction that frequently arises between buyers and sellers over quality of products that have been bought and delivered. The points are:

1—Conversion of specific gravity of oil products into terms of the Baume or the A.P.I. scale and proper reading of gravity by means of the hydrometer.

2—Correction of A.P.I. gravity from observed degrees at observed temperatures to gravity at 60 degrees F.

3—Correction of volumes of oil at observed temperatures to volumes at 60 degrees F.

Of course, all the chemists and physicists in the oil business, as well as a good many others, are thoroughly familiar with accurate methods and procedure for determining these facts. However, judging by the number of inquiries received by NATIONAL PETROLEUM NEWS, there are many readers to whom these matters furnish knotty problems.

For this reason it seems worth while to reprint from Circular 154 of the U. S. Bureau of Standards, the explanation of the procedure for making gravity determinations and of the evolution of the A.P.I. gravity scale, and of the method of correcting gravity and volume for temperature changes.

Not only did the Bureau of Standards, in cooperation with the Bureau of Mines and the American Petroleum Institute, explain the meaning of Baume, A.P.I. and specific gravity and the method of making corrections for temperature, but they figured out specific gravity changes and coefficients of expansion to various temperatures and various grades of oil. These they incorporated in tables in Circular 154, which was put out originally in 1924.

There are six of these tables, each covering many pages. Table 1 is for "Reduction of Observed Degrees A.P.I. to Degrees A.P.I. at 60 F." It covers by single degrees the changes in gravity of products ranging from 10 A.P.I. to 99 A.P.I. gravity at temperatures from 0 F. to 125 degrees F. in the case of the heavier oils and to 90 degrees F. in oils from 70 to 99 degrees A.P.I.

Table 2 is for determining "Volume at 60 F. Occupied by Unit Volume at Indicated Temperature" and this table has worked out by degrees F. the changes in volume for temperature for oils from 10 A.P.I. to 99 A.P.I. and from 0 to 195 F. in the case of oils up to 39 A.P.I. and 150 and 90 degrees F., respectively, for the lighter products.

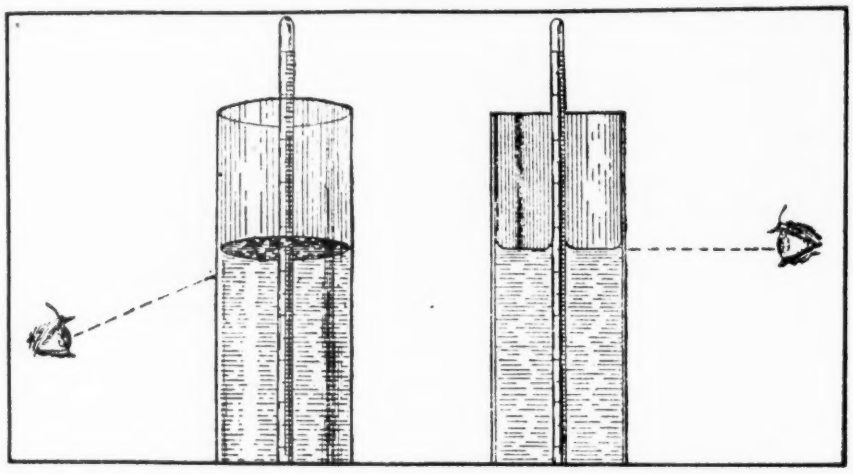


*Figure 1 at left and figure 2 at right illustrate the proper method of reading gravity by means of a hydrometer. See text*

Table 3 is for "Reduction of Observed Specific Gravities to Specific Gravities at 60/60 Degrees F." and covers similar gravity and temperature ranges. Table 4 is to determine "Degrees A.P.I., Pounds per Gallon and Gallons per Pound Corresponding to Designated Specific Gravities." Table 5 has figured out "Specific Gravities, Pounds per Gallon and Gallons per Pound Corresponding to Designated Degrees A.P.I." Table 6 has "Degrees A.P.I. (Modulus 141.5) Corresponding to Degrees Baume (Modulus 140)." References in the following text to the tables are to these tables just mentioned.

Taking up first the conversion of specific gravity to the Baume or A.P.I. scale Circular 154 says:

"When the Bureau of Standards first took up the testing of hydrometers in 1904, careful inquiry was made of the manufacturers and users of these instruments as to the basis of the various scales in common use.

"In the case of hydrometers for petroleum oils the scale said to be in general use was the so-called Baume scale for liquids lighter than water. The relation of this scale to specific gravity is expressed by the formula

$$\text{Degrees Baume} = \frac{140}{\text{sp. gr. } 60^\circ/60^\circ \text{ F.}} - 130$$

"Subsequently it was learned that a greater number of the hydrometers used in the oil trade were not on the basis of the above relation but were more nearly in agreement with a scale represented by substituting 141.5 and 131.5 in the above formula in place of 140 and 130. Accordingly new tables were published by a manufacturer of hydrometers and by oil companies on this basis; that is, the actual hydrometer scales were continued unchanged and the relation to specific gravity was redefined, the new scale still being commonly known as the Baume scale. At the same time, other manufacturers and users of oil hydrometers continued the use of the original Baume scale.

"As a result, much confusion has existed in the petroleum industry by reason of the use of two so-called Baume scales for light liquids, one based on the modulus 140 and the other on the modulus 141.5.

"The American Petroleum Institute, the U. S. Bureau of Mines and the U. S. Bureau of Standards in December, 1921, agreed to recommend that in future only the scale based on the modulus 141.5 be used in the petroleum industry and that it be known as the A.P.I. scale to clearly distinguish it from the original Baume scale for light liquids.

### Specific Gravity and Pounds per Gallon

"Specific gravity is defined as the ratio of the weight of a given volume of oil at 60 degrees F. to the weight of the same volume of water at the same temperature, all weighings being corrected for the buoyancy of air.

"The weight per gallon of oil is the apparent weight of a volume of 231 cubic inches of oil at 60 degrees F. when weighed in air, of 50 per

cent humidity and at a pressure of 760 millimeters of mercury and against brass weights of 8.4 density or against weights reduced to that basis. The assumed weight of a gallon of water at 60 degrees F. in air is 8.32828 pounds.

**Calculation of Weight per Gallon**

"Specific gravity as used throughout this circular is 'true specific gravity,' that is, all weighings are corrected for the buoyancy of the air. It is necessary, therefore, to change these values to 'apparent specific gravity' before they can be multiplied by the weight of a gallon of water to give the weight of a gallon of oil at 60 degrees F. in air.

"The magnitude of the correction to specific gravity is shown in the following table:

| True specific gravity at 60/60° F. | Correction | Apparent specific gravity at 60/60° F. |
|---|---|---|
| 0.60 | —0.00047 | 0.59953 |
| 0.70 | —0.00035 | 0.69965 |
| 0.80 | —0.00023 | 0.79977 |
| 0.90 | —0.00012 | 1.00000 |

"The necessary change of specific-gravity basis has been made in the calculation of the tables and the only reason for calling attention to it is to point out the reason why the tabulated weights per gallon as given in the tables are not obtained by simple multiplication of the specific gravity at 60 degrees F. by the weight of a gallon of water at 60 degrees F. in air.

**Applicability of the Tables**

"The tables given in this circular apply to all petroleum oils both crude and refined, produced in the United States. Each grade of oil, gasoline, illuminating oil, lubricating and fuel oil, etc. falls into its proper place in the tables by reason of its specific gravity.[1]

"Although it is generally believed that California oils have a considerably higher rate of expansion than do oils from the central and eastern states, this has not been found to be the case and the slightly higher rate is not sufficient to cause an appreciable error in the results given in the tables.

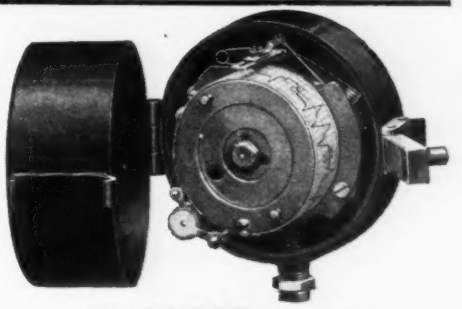
**Method of Reading the Hydrometer**

"The correct method of reading the hydrometer is illustrated in Figure 1 and Figure 2. The sample of oil is placed in a clear glass jar or cylinder and the hydrometer carefully immersed in it to a point slightly below that to which it naturally sinks and is then allowed to float freely.

"The reading should not be taken until the oil and the hydrometer are free from air bubbles and are at rest. In taking the reading the eye should be placed slightly below the plane of the surface of the oil (Fig. 1) and then raised slowly until this surface, seen as an ellipse, becomes a

1—In the case of oils containing paraffin or other materials that become solid at low temperatures the expansion shown by the tables is somewhat too small at temperatures below the point of solidification.

*The complete tape is "36 hours long". It is divided into hours by means of vertical lines. Those hours are subdivided into five minute periods. The vertical spaces on the tape show the distance traveled. Each line represents one-fourth of a mile.*



The OHMER Recordograf

# When Your Trucks Have Memories

THE OHMER Recordograf is like a "brain" on your trucks and commercial vehicles. When the working day is over the Recordograf "remembers" every movement the vehicle made—the speed, the stops, the time, the mileage.

Above is illustrated a section of the Recordograf tape. When the vehicle is running the indelible pencil line moves obliquely over the tape. When idle, this pencil line is horizontal.

The speed of the vehicle is shown by the slant of this pencil line. If it is almost perpendicular you know your truck was being driven at a high rate of speed. And if the horizontal lines occur too often and are too long you know that there has been excessive idling time. You need not dig through a mass of figures to get this information—a glance at the tape is enough.

The OHMER Recordograf will give you the *facts* upon which you can act. It will enable you to operate your truck or fleet on a more economical basis. It will show you how to avoid losses. It will show you how to make bigger profits than ever before. Pin the coupon below to your letterhead and drop it in the mail. We will be glad to send you complete information about this remarkable money-saving device. There's no obligation involved. Do it for your business—today.

OHMER offers a big opportunity for dealers. Write today for information.

## *Other OHMER Products*

*The Odometer and Hub-Odometer, two famous OHMER mileage meters. Fare registers of every type and for every purpose. Ticket-printing and Non-printing Taximeters. Four styles of Fare Boxes. Industrial counters for many purposes.*

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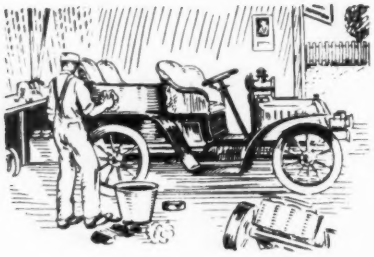
FARE REGISTER COMPANY

Dayton, Ohio, U. S. A.

Send us further information about the operation and installation of the OHMER Recordograf.

*Pin this to your letterhead*



**..... 25 years ago water and a sponge would do!**

BACK in the days of the side-winding horseless carriage a sponge and water did quite well for a wash job.

Today, the time factor demands a speedy wash. Today, the more frequent (sometimes almost constant) use of the car requires a weekly wash. Today, chromium-plating and highly-polished body finishes claim more attention and a wash that is gentle as well as thorough.

In short, the automobile generation of today will not be satisfied with a "sponge-and-water" job. Nothing less than a Globe Simplex Car Washer will do.

Let us send you our circular "Car Washing—Make it Pay You a Bigger Profit with the New GLOBE SIMPLEX HI-PRESSURE CAR WASHER". Sixteen points of superiority are carefully detailed.

***Our complete new catalog featuring GLOBE Two-Stage and Single-Stage AIR COMPRESSORS, AIR TOWERS, PAINT SPRAY OUTFITS, FITTINGS, and ACCESSORIES gladly mailed at your request.***

**GLOBE MANUFACTURING COMPANY**
**56-66 Grant St., Battle Creek, Mich.**

***Canadian Sales Agent: Donald Dixon & Co., 21 King St., E. Toronto, Ontario, Canada***

GLOBE
GARAGE & FILLING STATION EQUIPMENT

straight line (Fig. 2). The point at which this line cuts the hydrometer scale should be taken as the reading of the instrument (Fig. 2).

"In case the oil is not sufficiently clear to allow the reading to be made as above described, it will be necessary to read from above the oil surface and to estimate as accurately as possible the point to which the oil rises on the hydrometer stem. It should be remembered, however, that the instrument is calibrated to give correct indications when read at the principal surface of the liquid. It will be necessary, therefore, to correct the reading at the upper meniscus by an amount equal to the height to which the oil creeps up on the stem of the hydrometer. The amount of this correction may be determined with sufficient accuracy for most purposes by taking a few readings on the upper and the lower meniscus in a clear oil and noting the differences.

"A specific-gravity hydrometer will read too low and an A.P.I. hydrometer too high when read at the upper edge of the meniscus. The correction for meniscus height should, therefore, be added to a specific gravity reading and subtracted from an A.P.I. reading.

"The magnitude of the correction will obviously depend upon the length and value of the subdivisions of the hydrometer scale and must be determined in each case for the particular hydrometer in question.

**Determination of Temperature**

"The determination of the temperature of an oil should be made to a degree of accuracy that is comparable with the accuracy of the determination of the gravity of the oil. If the reading of an A.P.I. hydrometer is made to the nearest 0.1 degree A.P.I., it is necessary that the temperature measurement be made to 1 degree F. for an oil having an A.P.I. reading of about 58. For an oil having a reading of 90 degrees A.P.I. the temperature measurement may be taken to the nearest 2 degrees F. and have the same order of accuracy as the determination of A.P.I. gravity. It is therefore necessary that the thermometer be corrected for errors in calibration so that the temperature as determined may be well within the limits given above.

"If the thermometer is not made as a part of the hydrometer, the thermometer should be so placed that the bulb can assume the temperature of the oil and as much of the mercury column as is feasible should be immersed. This is of considerable importance, especially if the temperature of the oil differs greatly from that of the surrounding air. For example, if the temperature of the oil equals 200 degrees F. an emergent column of 50 degrees F. on the scale (approximately 2 inches) will cause an error in the temperature measurement of about 0.5 degree F., provided the average temperature of the emergent column equals 90 degrees F.

"In reading a thermometer accurately care must be taken that the line of sight is perpendicular to the thermometer scale in order to avoid parallax."

## Program for Petroleum Safety Congress

NEW YORK, Sept. 4.—What promises to be one of the largest conventions ever held in New York City, requiring the use of five hotels for the 110 meetings scheduled, is the seventeenth annual Safety Congress to be held from Oct. 1 to 5. More than 30 accident prevention groups, representing every great employing industry, including oil, will have sessions. Headquarters of the petroleum section will be Hotel Pennsylvania.

Among the principal addresses to be delivered before the Petroleum Section of the National Safety Council, will be one by Carl Young, of the division of standardization of the American Petroleum Institute, Dallas offices and by Edward Prizer, chairman of the board, Vacuum Oil Co., New York. Mr. Young's subject is "Standardization and Its Relation to Accident Prevention."

Reports of officers and various committees will open the sessions on Oct. 2, followed by an address by George F. Prussings, Union Oil Co. of California, Los Angeles, chairman of the petroleum section.

Other speakers representing the petroleum section, and their subjects, will be:

D. J. Wallace, director, Petroleum Safety Council, Tulsa, on "Accident Prevention in the Mid-Continent."

E. R. Lederer, vice-president, Texas Pacific Coal & Oil Co., Fort Worth, "Corrosion Hazards in Refineries."

C. W. Smith, assistant director of personnel, Standard Oil Co. of Indiana, "The Engineering Committee and Its Work in the Petroleum Industry."

W. H. Boggess, superintendent of safety, Sinclair Oil & Gas Co., Tulsa, "Safety Organization in Producing Fields."

H. C. Fowler, U. S. Department of Commerce, "Safety Activities of the U. S. Bureau of Mines."

James H. Herbert, Conewango Refining Co., Warren, Pa., and president, Fire and Safety Marshals Association of the National Petroleum Association, "Group Activity in Fire and Accident Prevention."

H. N. Blakeslee, field representative of the Petroleum Section, "Follies and Progress."

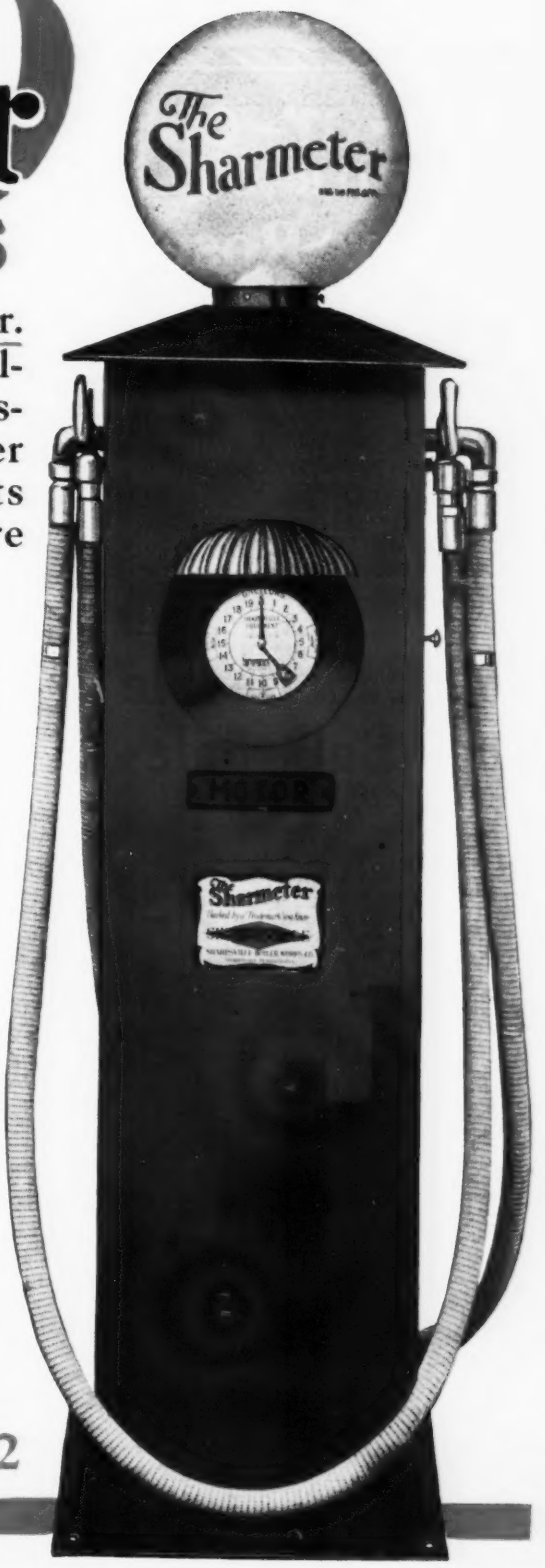
Presentation of the Petroleum section safety contest trophies will take place at a luncheon to be held Oct. 3.

# Sharpsville

## Now Enters a New Field with The Sharmeter 750 SERIES

REG. U.S. PAT. OFF.

**A new model -- low priced -- Sharmeter. In performance, and in economy of installation and operation, it is a superior dispensing unit for stations operating under lease or for stations located at points where gallonage does not warrant more expensive equipment.**




SETTING a new standard for low cost meter dispensing, the Sharmeter 750 Series is the result of the great strides which Sharpsville engineering and manufacturing science have made within the past 15 months.

The electrically driven unit — for operation by either direct drive or remote control — embodies the most advanced ideas of economical, efficient and speedy dispensing service. It is easily installed and can be quickly moved from one point to another when occasion requires.

Units for operation by air pressure or by gravity can also be furnished just the same as in our 610 and 710 Series.

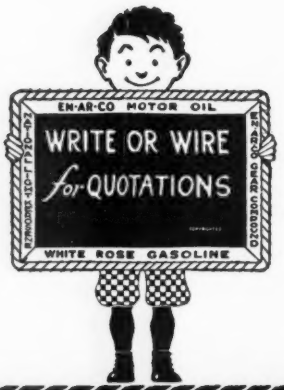
The cabinet is of substantial construction and can be furnished for one or two meter outlets as desired.

*Send for further details and prices*

## SHARPSVILLE BOILER WORKS CO.

**SHARPSVILLE, PA.**

M-752




**En-ar-co**
**MOTOR OIL**
**White Rose**
**GASOLINE**

YOU will make money if you handle these nationally advertised brands.

All grades of lubricating oils and greases.

**The National Refining Co.**
**Cleveland, Ohio**

*Additional space for present and future expansion is provided in this new plant of the Panther Oil & Grease Mfg. Co., Fort Worth, Tex.*

# Panther Greases to Head East

FORT WORTH, Aug. 30 Plans to intensify distribution of its lubricating oils and greases are under way by the Panther Oil & Grease Mfg. Co., which just moved into its new factory here.

The company is owned and operated by Fort Worth men and has been in business for the past six years. Carl Wollner is president and treasurer; A. M. Pate, vice president, and B. L. Hargis, secretary. E. H. Beall, a well known business man here, is a director of the company.

The company employs 37 salesmen and markets in 26 states in various parts of the country. It handles only grease and lubricating oils.

Plans are to put on an active selling campaign in Ohio, Indiana, Illinois, Michigan and Pennsylvania where the company already has a number of accounts.


# You Can Double Your Bulk Sales

***on Oil, Gas, etc.***

Sell your "drive in" customers 50 gallons instead of 5, by making BULK buyers of them. Many companies are now doing it by using this handy

**KWART KWICK**
**Home Oil Pump**

It fits any drum or barrel, enabling the car owner to buy from you in drum lots. You get ALL his business ALL the time. And you can forget competition.

Pump is made of finest brass, steel and cast iron. Lasts indefinitely. Nominal in cost. Special discount to oil companies.

Mail the coupon below and let us outline our special sales plan, which is showing remarkable returns for so many companies.

**Kwart Kwick Dep't.**
**VIKING PUMP CO.**
**Cedar Falls, Iowa**

Mail This

Viking Pump Co., Dept. B.

Please send details about your Kwart Kwick Pump, and your special sales plan.

Name.....

Town.....

State.....


## Oil Well Sales Manager Dies in East

OIL CITY, Aug. 30.—James Bentley Forker, sales manager for the past 34 years of the Oil Well Supply Co., and well known in eastern oil circles, died at Clifton Springs, N. Y. on Aug. 23 at the age of 60. Heart trouble was the cause of death. Mr. Forker was also one of the owners and a director of the Tionesta Gas Co. at Oil City.

He is survived by his widow, three sons and two sisters. Funeral services were from the home here and burial was at Callensburg cemetery.

### Covers Territory in Airplane

KANSAS CITY, Mo.—Earl A. Van Buskirk, who sells oil equipment for the Butler Mfg. Co., in Missouri, Kansas and Nebraska, used an airplane the week of Aug. 20 to cover his territory. The plane belongs to the Butler company and is used in selling the company's steel hangars. Elmer S. Rodenbaugh, company pilot, accompanied him.

Mr. Van Buskirk said that it was a novel experience to come down from the skies to visit prospects, according to Hy White, advertising manager for the Butler company.

## Production Engineers Meet In Los Angeles Sept. 21

LOS ANGELES, Sept. 1.—The fall meeting of the California development and production engineering section of the American Petroleum Institute will be held at the Chamber of Commerce Building in Los Angeles the night of Sept. 21. The general subject will be "Conservation in California."

A speaker yet to be selected will discuss practical conservation. Other speakers will be as follows:

"Ventura Proration," T. E. Swigart, Shell Co. of California.

"Gas Conservation and Natural Gas Supply," A. F. Bridge, Southern Counties Gas Co.

"Storage and Repressuring in West Coyote and Montebello," J. F. Dodge, Standard Oil Co. of California.

"Storage and Repressuring in Dominguez," E. W. Masters, Shell Co. of California.

"Storage and Repressuring in Brea-Olinda," F. W. Lake, Union Oil Co. of California.

The meeting will follow a banquet and reservations are now being made through A. C. Rubel of the Union Oil Co. Everyone interested in the conservation question is being urged to attend.

## World's Fair Campaign Begins in Industry

CHICAGO, Sept. 1.—Campaigners for Chicago's 1933 World's Fair have invaded the petroleum industry for men. Fred C. Adams, head of the oil company that bears his name, has surrounded himself with an active group of oil men to sell the fair to the oil industry.

Just now they are selling "memberships" at $5 each to any Chicagoan who is interested $5 worth in the event. Mr. Adams' committee is concentrating on the oil, paint and decorating industries.

W. A. Jones of Standard Oil Co. of Indiana; John T. Balkam of Pure Oil Co.; John R. MacGregor of Eagle-Picher Lead Co., and John B. Waldo, dean of the Chicago oil news writers, are on Mr. Adams' committee.

## E. A. Durham Returns From Europe

SISTERSVILLE, W. Va., Sept. 1.—E. A. Durham, president of the Trico organization, which includes the Wiser Oil Co., the western division, and Petroleum Exploration Co., arrived home in Sistersville on Aug. 23 from a two months' trip to Europe. He was accompanied by Mrs. Durham.

Mr. Durham reports that there is a great demand for American made automobiles in Europe. He found unemployment in England but reports business conditions much better in Belgium, Holland, France and Switzerland.

While in London Mr. Durham was the guest of Hon. Bernard Sugden, of Cleckheaton, Yorkshire, with whom he attended the annual luncheon of the Federation of Chambers of Commerce of the British Empire at the Savoy hotel, which was also attended by Lord Kylsant, the Earl of Athlone, governor-general of the Union of South Africa, Viscount Lascelles, Sir John Simon, Sir P. Colville Smith, Bernard Sugden, Eugene Ramsden, M. P. and others.

### Veteran Producer Dies

OIL CITY, Sept. 1.—The death on Aug. 26 of George Wratten of Rouseville, Pa., marks the passing of another veteran oil man in the Pennsylvania fields. Mr. Wratten came to Rouseville in the 1860's with the first oil excitement and drove a stage between Titusville and McClintock, Pa. He later became an oil producer but on Nov. 1, 1926 sold all of his holdings to his son-in-law, W. H. Noel, on account of ill health.

Mr. Wratten was 84 years old and was born in Marden, Kent county, England, on Sept. 16, 1843. He is survived by four daughters.


# *Super Service Stations and Greasing*

In 58 articles during the past 1½ years, NATIONAL PETROLEUM NEWS has told how to build and operate super service stations profitably — how to build greasing stations — how to sell lubrication service and how to grease cars properly—

These articles tell you how:

**1928**

Chain stations de luxe in California Aug. 22, p. 25
Profits from proper greasing of cars Aug. 22, p. 71
Super service stations, central locations Aug. 15, p. 80
Bus terminal boosts sales Aug. 1, p. 20
Camp in scenic region draws tourists July 25, p. 68
Everything for the car on one lot July 25, p. 83
Grease salesman tells how to sell grease July 18, p. 81
Station reclaims desert in California July 18, p. 84
Elaborate station opened in Tulsa July 18, p. 94
Brake tester added to super station July 4, p. 101
Tourist camp increases gallonage June 27, p. 27
Chassis greasing profit hardly scratched June 13, p. 21
Cuba has first super service station June 13, p. 84
Determining successful stations June 6, p. 29; May 9, p. 67; Apr. 25, p. 27; Apr. 18, p. 29
Greasing success means good merchandising May 30, p. 53
Super station solves parking problem May 30, p. 26
How car lubrication adds to profits May 23, p. 19
Grease station designed after year's travel May 16, p. 25
S.A.E. viscosity numbers for motor oils May 2, p. 23
California station patterned after mosque Apr. 18, p. 93
Answers to 48 questions about motor oil Apr. 11, p. 84
Super stations favored more in city Apr. 11, p. 121
Commissions boost lube oil sales Apr. 11, p. 123
Individually owned super stations thrive best March 14, p. 97
Leasing super stations to individuals March 14, p. 113
Builds airplane and auto station March 7, p. 104
Profitable business in company stations March 7, p. 17
Artistic station has variety of services Feb. 29, p. 85
S.A.E. viscosity numbers for motor oils Feb. 8, p. 58
Steady customers at grease stations Feb. 1, p. 29
Chain store methods in selling gasoline Jan. 25, p. 27
England builds drive-in stations Jan. 4, p. 88

**1927**

Auto laundries for gasoline stations Dec. 28, p. 25
Invests $200,000 in super station Dec. 21, p. 26
"Open all night" stations profitable Dec. 14, p. 47
Contest for station designs Nov. 16, p. 31
Greasing rightly done Oct. 26, p. 50
Faster car driving brings new lube requirements Oct. 12, p. 17
Super service station merchandising Oct. 5, p. 83
Accessibility governs station design Sept. 28, p. 19
Ample space for service Aug. 10, p. 27
Opens compact pagoda station Aug. 3, p. 73
Good greasing done in alley July 6, p. 73
Super service station under one roof June 22, p. 81
One pump business now super station May 11, p. 45
Builds stations to fit surroundings May 4, p. 27
Leases stations to individuals May 4, p. 95
Boosts grease sales by quota Apr. 13, p. 56
Sells coach lubrication by the mile Apr. 13, p. 93
Greasing done in formal gardens March 2, p. 72
Package campaign increases motor oil sales March 2, p. 91
Station has golf course March 2, p. 124
Teaches bus and truck lubrication Feb. 23, p. 89
Greasing on contract carries diploma Feb. 16, p. 84

**National Petroleum News**
Main Office: 1213 West Third St.
Cleveland, Ohio

# In Millions of HOME GARAGES

there is a Place for MODEL "200" BARREL PUMP

## The PUMP that PUT LEAKY FAUCETS OUT OF BUSINESS

MODEL 200 is all-metal and so well built that it is capable of handling kerosene, gasoline, alcohol, etc., as well as motor oils. It fits 1½" to 2" drum openings and has adjustable sliding intake for draining 15 to 60 gallon capacity drums. Its handle is malleable and arranged for locking. Nozzle discharges a strong, unbroken stream and cuts off oil flow cleanly. Is transferable from drum to drum quickly. Replaces leaky faucets because of its exceedingly low price due to Bennett intensive specialization and large volume production.

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Model 200 has been responsible for the sale of literally hundreds of thousands of drums of extra oil to consumers. Use it to merchandise your motor oil.

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Write Muskegon, Michigan, Bennett Export Corporation, 32 Broadway, New York City

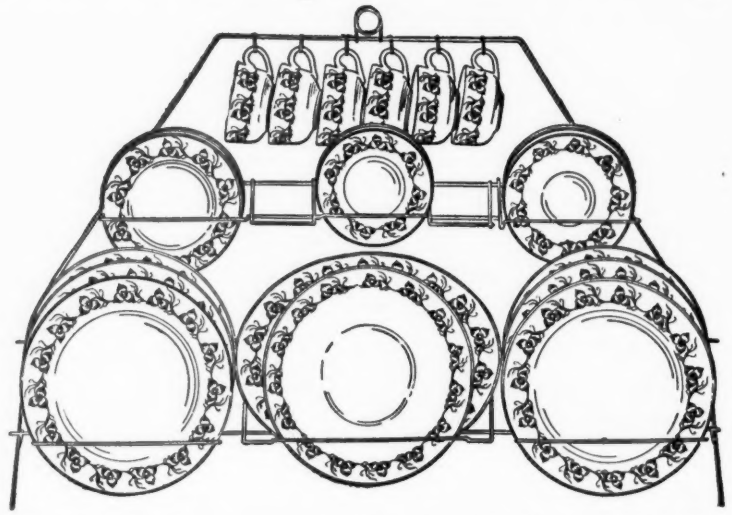
Symbol of Quality

# NEW!

## This 32-Piece DINNER SET

*(Service for Six People)*

## Will Build up Your Gallonage



OUR new and exclusive process of producing underglazed dinnerware makes this beautiful Delft Blue, Clover Leaf Border Design—reminiscent of the quaint old Colonial Designs—wear-proof, wash-proof and permanent.

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Our discovery of this new process together with our volume production enable us to present to you a plan of great pulling power.

Following our established policy of distribution, only high grade companies will be selected and on an exclusive basis in a given territory.

Our 25 years of experience in trade promotion plans have taught us how to apply this new Underglazed Dinnerware to building your gallonage.

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# OIL TIGHT STORAGE

**Cost No More Than The Leaky Kind**

## Why Buy Leakers?

***Send us your inquiry for oil-tight equipment***

**BROWN SHEET IRON & STEEL CO.**

**St. Paul Minnesota**

# A Tank Car Market is Largely Geography

AGAIN we must call attention to the carelessness with which the trade is considering the phraseology it uses in regard to the tank car market. We have emphasized this editorially, by circular letter, in The Oilgram and by booklet many times; but the tightening of the margins for the jobber have seemingly caused the trade to relapse into its old time careless thought and speaking.

The price F. O. B., Group 3, as given by NATIONAL PETROLEUM NEWS and The Oilgram, is the price at which refiners are selling from their refineries located in Group 3.

That, and all other prices, are based upon definite specifications or petroleum products. Gasoline of U. S. Motor grade means just that and nothing else; not material that is below that grade in any particular.

Some oil men still seem to think that any price quoted on a Group 3 basis providing it is lower than the actual Group 3 price, is that which should prevail. They overlook the fact that most of the industry outside of California and the Atlantic coast, use Group 3 as a price basis.

When refiners in districts outside Group 3 quote under the price of the Oklahoma refiners that means that these outside refiners are the ones selling at that lower price. The Oklahoma refiners don't have to sell at that lower price unless they want to. It would not be fair for a price quoting authority, such as this paper, to change the prices at which Oklahoma refiners—those in Group 3—are selling at unless those refiners in that Group actually sell at these lower prices.

Right now refiners in outside districts are beginning to shade the Group 3 market, but the Oklahoma refiners are not meeting those cut prices. That is the business of the Oklahoma refiners; not the business of this paper nor of jobbers wishing lower prices, nor of brokers. When the Oklahoma refiners sell at lower prices this paper will at once show it in the weighted average price F. O. B. Group 3.

When the tank car market is changing there seems to be considerable of this misunderstanding of the fundamentals of the tank car market. This misunderstanding is undoubtedly increased by the practice of some brokers who broadcast prices less than those of the Group 3 refiners. These brokers do not take any trouble to let the trade know that this lower price material, if any, is not coming from Group 3. In the last few days such brokers have broadcasted prices on a Group 3 basis, whereas the material has actually been small in quantity and has come from Louisiana and Arkansas and from the Texas panhandle, where good gasoline is made but this last has a high sulfur content which, in the opinion of the trade, makes it worth less than ordinary gasoline. But these brokers neglect to tell about this sulfur content.

A certain class of brokers make their money, or try to, from their speculations in the market. They are not satisfied with the eighth of a cent a gallon generally considered the broker's commission. They go into the market when they think it is low and buy outright and resell when the market gets higher. And they sell in a high market at a lower price when they think they will be able to buy the necessary material later on, just before they have to ship, at a lower price. In other words, they go "long" and "short" on the market. They speculate.

This type of broker is not interested in a stabilized, steady price level in the tank car market because he cannot make more than an eighth of a cent a gallon at the most on it. He wants a widely fluctuating market, like the stock brokers and speculators in the New York stock markets.

We have inveighed against brokers of this type for many, many years, and have drawn on our heads not only the customary vials of wrath but whole tank cars of it, in fact tank farms of it. There is a field, as we have often said, for what we call legitimate brokers, who help the small refiners to distribute their products, and the larger ones to dispose of surpluses at times, at minimum cost and to the best interest of all. There is also a field for these legitimate brokers to represent the jobbers in their buying. These brokers pay their bills promptly, live up to their contracts and are in every way desirable business elements in the oil business.

But for the other kind, the speculators, there is no room.

And again—please read your price information these days exactly. If you wish more information on what is the tank car market and what affects it, and you didn't get one of our booklets on the subject, issued this Spring, write us.—W. C. P.

## Introduces New Service For "Gas" Stations

RICHMOND, Va., Sept. 4.—Dan Cupid, with full quiver, went a-hunting and picked a filling station for his target practice. Two North Carolina couples, waiting for gasoline, were his targets.

While an attendant serviced their automobiles, James Walls, of Waynesville, N. C., and Elizabeth Williams, of Asheville, and Robert E. Carter and Evelyn Eva Jenkins, also of Asheville, asked Harry B. Jones, owner of the station, if there was "anyone in the place who could marry us?"

Jones admitted that he was a notary public and, under the South Carolina laws, empowered to conduct the marriage ceremony. His lack of experience, however, was almost woeful, he hastened to explain.

Undeterred, the couples conferred hastily.

"Why not?" they asked.

Licenses were produced, Jones called witnesses and the double ceremony was performed.

### Morrison New General Superintendent

TULSA, Sept. 1.—W. J. Morrison is the new general superintendent of production for the Wilcox Oil & Gas Co. Mr. Morrison is not a newcomer with the Wilcox organization, having been the company's district superintendent at Russell, Kansas, for some time. His headquarters will be in Tulsa, the home-office of the Wilcox Oil & Gas Co. Mr. Morrison succeeds S. T. Walker, who has resigned.

### Shore Dinner for Eastern Oil Men

NEW YORK, Aug. 31.—The next regular meeting of the Independent Oil Men's Association of New England will be at the Middletown Golf Club, Middletown, Conn. Sept. 12.

J. H. Porteous, Valley Oil Co., Hartford, Conn. is host. Mr. Porteous according to preliminary announcement, has arranged for an old fashioned shore dinner with plenty of clams, lobsters, sweet corn, etc. This will be the last of a series of outdoor meetings for this year.

WICHITA, Kans.—Bridgeport Machine Co. has opened a store in McPherson, Kans., where drilling is increasing and is adding another at Maud, Okla., to serve the St. Louis pool development. A full line of the well known Bridgeport products will be stocked.

# There are extra profits in selling OPALINE.. REG U.S. PAT OFF. the extra service motor oil

YOU build bigger business—you make bigger profits—when you become an Authorized Opaline Dealer.

That's because Opaline is more than just a motor oil of the right *quality.* It is motor oil that comes in different grades, to fit the different degrees of wear that occur in automobile engines.

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*Also Makers of Sinclair Gasoline and H-C Gasoline*

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# Refinery - Tank Wagon Markets

National Petroleum News

# Gasoline Market Shows Less Activity; Demand for Kerosene Strong

Staff Special
TULSA, Sept. 1

THE Mid-Continent refinery market the last week of August was quieter than it has been since the spring demand for gasolines developed early in the year. Exporters were inactive, while jobbers apparently were unconcerned over a generally anticipated increase in gasoline consumption over the Labor Day holidays. While gasoline buying was still at a fairly high level the volume was not nearly as large as that of two or three weeks ago.

Natural gasolines broke sharply with demand light for spot shipments and little interest shown in shipments for over the month.

Kerosenes were in good demand in all areas with goods comparatively scarce for spot shipments. One or two refiners continued to buy goods on the outside.

Distillates increased in demand. Prices were fractionally higher as a result of higher kerosene prices. Gas oils were steady. Fuel oils were quiet, with high gravity goods in slightly better demand. Neutral oils and cylinder stocks were unchanged. Demand for wax was strong and prices advanced to 5 cents a pound.

### Gasolines

Spot gasoline buying by jobbers in the Mid-Continent was light the last week in August when compared with other weeks this summer, but shipments continued to be well above the total for this period a year ago. Two or three refiners were still buying gasolines on the outside but for the most part refiners filled their orders this week with their own production.

A rapid break in the domestic market was noted in north Texas late in the week. The Gulf Refining Co. bought 150 cars of U. S. Motor in that district at 9 cents a gallon, north Texas freight rate. A marketer handled the deal and was reported to have paid the refiners 8,875 cents a gallon. The sellers could ship the goods either immediately or over September.

This break apparently was the result of a few refiners in that district becoming alarmed when two or three weeks went by without active export buying such as they had become accustomed to. Stocks of gasoline at the Texas plants reporting weekly operations to this publication are lower than they were a year ago, while shipments have been running considerably higher.

Oklahoma refiners have encountered some resistance to their prices as a result of several widespread quotations on a Group 3 freight basis, the goods originating outside of Oklahoma. One seller has been moving his west Texas gasoline at 9.125 cents a gallon, while another has been selling at 9.25 cents a gallon, the goods also originating in Texas. Very little of the gasoline being offered at these prices on a Group 3 basis will meet U. S. Motor specifications. Jobbers and marketers report they have been unable to obtain more than two or three odd cars of gasoline the past week in Oklahoma at less than 9.50 cents a gallon, and these sales were to marketers who resold the goods. A careful check Thursday and Friday indicated no Oklahoma refiner was either quoting or selling 58-60 U. S. Motor gasoline to the trade at under 9.50 cents a gallon, and with one or two exceptions no quotations had been sent out for over September delivery.

Higher gravity gasolines were quiet with exporters showing virtually no interest in the market at the present time.

### Natural Gasolines

A break of a full cent in prices of natural gasolines was recorded the last week in August. Heavy buying which was expected in a few quarters failed to materialize and much of the over the month buying was reduced in volume. When the buying failed to materialize by Aug. 27, several manufacturers pushed their goods on the market in the hope of clearing their books before the end of the month. This effort to "clear deck" brought the price from its high of 10.75 cents to the level of 9.75 cents a gallon Sept. 1.

### Kerosenes

No break was apparent in the demand for kerosenes. Both jobbers and refiners continued to seek goods. The commodity was reported comparatively scarce in all areas for prompt shipment. At least three refiners in Kansas were buying on the outside to fill their orders, two or three Oklahoma refiners were doing the same while at least two in Texas were buying. There was virtually no kerosene available for spot sale in either Louisiana or Arkansas.

The Humble Oil & Refining Co. has been one of the heavier purchasers of kerosene in the Mid-Continent. This company was understood to have bought a large quantity in July for both July and August shipment. This purchase coupled with a few export sales has kept kerosenes moving evenly and in good volume. As far as is known the Humble company has not been in the market as yet for kerosene for September. If this company should buy anywhere near as much as it has been accustomed to buying, refiners predict kerosenes will remain in strong position until the end of September.

Price for 41-43 water white grade

# Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

*(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)*

## GASOLINE AND NAPHTHA

| PENNSYLVANIA | Prices Sept. 4 | Prices Aug. 27 | Prices Aug. 20 |
|---|---|---|---|
| 52-54 Napthha | 11.50 –12.00 | 11.00 –11.75 | 11.00 –11.50 |
| 54-56 Naphtha | 11.75 –12.00 | 11.50 –11.75 | 11.00 –11.25 |
| 58-60 U.S. Motor 437 e.p. | 12.00 –12.50 | 12.00 –12.25 | 11.75 –12.00 |
| 60-62 400-410 e.p. gasoline | 12.75 –13.00 | 12.50 –12.75 | 12.25 –12.50 |
| 64-66 390 e.p. gasoline | 13.75 –14.00 | 13.50 –13.75 | 12.75 –13.00 |
| 68-70 Str-run gas. 350-360 e.p. | 14.50 –15.50 | 14.50 –15.00 | 13.00 –14.00 |
| **OHIO** (Quotation of S. O. Ohio.) | | | |
| 58-60 U.S.Motor,delivered in Ohio, tax to be added | 13.00 | No spot quotations | |
| **OKLAHOMA** | | | |
| 48-50 540 e.p. naphtha | †9.00 – 9.125 | †9.00 – 9.125 | †9.00 – 9.125 |
| 50-52 450 e.p. naphtha | †9.00 – 9.125 | †9.00 – 9.125 | †9.00 – 9.125 |
| 56-58 450 e.p. gasoline | 9.375– 9.50 | 9.25 – 9.50 | 9.25 – 9.50 |
| 58-60 450 e.p. gasoline | 9.50 | 9.25 – 9.50 | 9.25 – 9.50 |
| 64-66 390 e.p. gasoline | 10.50 –10.75 | 10.50 –10.75 | 10.50 –10.75 |
| 68-70 350-360 e.p. gasoline | 11.00 | 11.00 | 11.00 |
| **OKLAHOMA (Weighted Average Prices)** | | | |
| 58-60 U.S. Motor, 437 e.p. | 9.7603 | 9.6861 | 9.7500 |
| 60 62 437 e.p. gasoline | 10.0625 | 10.0000 | 10 0938 |
| 60 62 400 e.p. gasoline | No sales | 10.3333 | 10.3542 |
| 64-66 375 e.p. gasoline | 11.0000 | No sales | 11.0000 |

Current week's prices in the above weighted average price table are effective on Saturday, Sept. 1, instead of Sept. 4. The two previous weeks' prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the respective columns. Sept. 4 weighted average prices are published on page 134 of this issue.

| | | | |
|---|---|---|---|
| **KANSAS** (F. O. B. refinery Kansas destination) | | | |
| 58-60 U.S. Motor 437 e.p. | 9.875 | 9.875–10.00 | 9.875 |
| 60-62 400 e.p. gasoline | 10.50 | 10.50 | 10.50 |
| 64-66 375 e.p. gasoline | 10.75 | 10.75 | 10.75 |
| **NORTH TEXAS** | | | |
| 48-52 450 e.p. naphtha | †8.75 | †9.00 | †9.00 |
| 56-58 450 e.p. gasoline | †8.75 | †9.00 | †9.00 – 9.25 |
| 58-60 450 e.p. gasoline | †8.75 – 9.00 | †9.125 | †9.25 – 9.50 |
| 58-60 U.S. Motor 437 e.p. | 9.125– 9.25 | 9.375– 9.50 | 9.75 |
| 60-62 400 e.p. gasoline | 10.00 –10.25 | 10.25 | 10.25 |
| 64-66 390 e.p. gasoline | 10.375 | 10.375 | 10.50 |
| 64-66 375 e.p. gasoline | 10.50 –10.625 | 10.50–10.625 | 10.625–10.75 |
| 68-70 350-360 e.p. gasoline | 10.75 –11.00 | 11.00 | 11.00 |
| **NORTH LOUISIANA** (N. La., Ark. and Miss. destination) | | | |
| 58-60 U.S. Motor gasoline | 10.25 –10.50 | **10.50 | **10.25–10.50 |
| **ARKANSAS** (Arkansas destination only) | | | |
| 56-58 450 e.p. gasoline | 9.75 | 9.75 | 9.75 |
| 58-60 450 e.p. gasoline | 10.00 | 10.00 | 10.00 |
| 58-60 U.S. Motor 437 e.p. | 10.25 | 10.50 | 10.50 |
| **‡CALIFORNIA** | | | |
| 54-58 U.S. Motor 437 e.p | 9.00 –12.50 | 9.00 –12.50 | 9.00 –12.50 |
| 58-61 U.S. Motor 437 e.p. | 9.50 –13.50 | 9.50 –13.50 | 9.50 –13.50 |
| 42-45 Eng. dis. 445-480 e.p. | 7.00 – 8.00 | 7.00 – 8.00 | 7.00 – 8.00 |

‡3c tax to be added to California gasoline prices if used in state.

## NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

| | | | |
|---|---|---|---|
| **OKLAHOMA** | | | |
| Grade AA, 80-87.9, 90% Recovery | 9.75 | 10.625–10.75 | 10.75 |
| Grade A, 72-79.9, 90% Recovery | 9.75 | 10.625–10.75 | 10.75 |
| Grade BB, 84-92, 85% Recovery | 9.75 | 10.625–10.75 | 10.75 |
| Grade B, 76-83.9, 85% Recovery | 9.75 | 10.625–10.75 | 10.75 |
| Grade C, 80-92, 78% Recovery | 9.625– 9.75 | 10.625–10.75 | 10.75 |
| **NORTH TEXAS** (F. O. B. Breckenridge) | | | |
| Grade AA, 80-87.9, 90% Recovery | 9.75 | 10.625–10.75 | 10.75 |
| Grade A, 72-79.9, 90% Recovery | 9.75 | 10.625–10.75 | 10.75 |
| Grade BB, 84-92, 85% Recovery | 9.75 | 10.625–10.75 | 10.75 |
| Grade B, 76-83.9, 85% Recovery | 9.75 | 10.625–10.75 | 10.75 |
| Grade C, 80-92, 78% Recovery | 9.625– 9.75 | 10.625–10.75 | 10.75 |
| **NORTH LOUISIANA** (F. O. B. Monroe District) | | | |
| Grade AA | †10.25 | †10.75–11.00 | †11.00 |
| Grade BB | †10.25 | †10.75–11.00 | †11.00 |
| Grade C | †10.25 | †10.75–11.00 | †11.00 |
| **CALIFORNIA** | | | |
| 75-85, 375-390 e.p. blend | 7.00 – 7.50 | 6.75 – 7.00 | 6.75 – 7.00 |

## MOTOR FUEL BLENDS

| | |
|---|---|
| **OKLAHOMA** | |
| 64-66 Blend 437 e.p. | none available |

## BURNING OILS

| PENNSYLVANIA | | | |
|---|---|---|---|
| 45 w.w. kerosene | 7.50 – 8.00 | 7.00 – 7.25 | 6.75 – 7.00 |
| 46 w.w. kerosene | 8.00 – 9.00 | 7.50 – 7.75 | 7.00 – 7.25 |
| 47 w.w. kerosene | 8.75 – 9.00 | 7.75 – 8.25 | 7.25 – 7.50 |
| 300 mineral seal | 7.50 – 7.75 | 7.50 – 7.75 | 7.50 – 7.75 |

| OKLAHOMA | Prices Sept. 4 | Prices Aug. 27 | Prices Aug. 20 |
|---|---|---|---|
| 41-43 w.w. kerosene | 6.50 – 6.75 | 6.50– 6.625 | 6.25 |
| 42-44 w.w. kerosene | 7.00 – 7.25 | 6.875– 7.125 | 6.50 |
| **KANSAS** (F. O. B. refinery Kansas destination) | | | |
| 41-43 w.w. kerosene | 6.875– 7.00 | 6.75 | 6.50 |
| 42-44 w.w. kerosene | 7.25 | 7.00 – 7.25 | 6.75 |
| **NORTH TEXAS** | | | |
| 40-42 w.w. kerosene | 6.00 | 6.00 | 5.75 |
| 41-43 w.w. kerosene | 6.25 | 6.25 | 6.00 |
| **NORTH LOUISIANA** (N. La. Ark. and Miss. destination) | | | |
| 41-43 w.w. kerosene | 7.00 | 6.75 – 7.00 | 6.50 |
| **ARKANSAS** (Arkansas destination only) | | | |
| 42-44 kerosene | 7.00 – 7.25 | 6.75 | 6.75 |
| **CALIFORNIA** | | | |
| 38-40 w.w. kerosene | 5.75 – 6.50 | 5.75 – 6.50 | 5.50 – 6.00 |

## NEUTRAL OIL

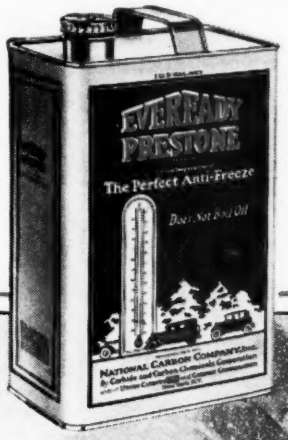
| PENNSYLVANIA Vis. | | (Viscosity at 70°F.) | |
|---|---|---|---|
| 200 No. 3 Assoc. Filt. | 30.00 –32.00 | 30.00 –32.00 | 30.50 –32.00 |
| 180 No. 3 Assoc. Filt. | 29.00 –30.00 | 29.50 –30.00 | 28.00 –30.00 |
| 150 No. 3 Assoc. Filt. | 24.25 –26.50 | 25.00 –26.50 | 25.00 –26.00 |
| | (Non Viscous) | | |
| 34 Grav. 330-340 Flash | 6.75 – 9.00 | 7.50 – 9.00 | 7.50 – 9.00 |
| 36 Min. Neut, 300-305 Flash | 6.00 – 8.50 | 6.00 – 8.50 | 6.50 – 7.50 |
| **OKLAHOMA Vis. Color** | | (Viscosity at 100°F.) | |
| 100—No. 2 | 6.00 – 6.50 | 6.00 – 6.50 | 6.00 – 6.50 |
| 150—No. 3 | 8.00 – 8.50 | 8.00 – 8.50 | 8.00 – 8.50 |
| 150—No. 4 | 8.00 – 8.50 | 8.00 – 8.50 | 8.00 – 8.50 |
| 180—No. 3 | 9.00 –10.00 | 9.00 –10.00 | 9.00 –10.00 |
| 180—No. 4 | 9.50 – 9.75 | 9.50 – 9.75 | 9.50 – 9.75 |
| 180—No. 5 | 9.25 – 9.75 | 9.25 – 9.75 | 9.25 – 9.75 |
| 200—No. 3 | 9.625–11.00 | 9.625–11.00 | 9.625–11.00 |
| 200—No. 4 | 9.50 –10.75 | 9.50 –10.75 | 9.50 –10.75 |
| 200—No. 5 | 8.50 –10.00 | 8.50 –10.00 | 8.50 –10.00 |
| 220—No. 3 | 12.50 –13.50 | 12.50 –13.50 | 12.50 –13.50 |
| 220—No. 4 | 12.25 –12.50 | 12.25 –12.50 | 12.25 –12.50 |
| 220—No. 5 | 11.50 –12.00 | 11.50 –12.00 | 11.50 –12.00 |
| 240—No. 3 | 13.50 –14.00 | 13.50 –14.00 | 13.50 –14.00 |
| 240—No. 4 | 13.25 –13.50 | 13.25 –13.50 | 13.25 –13.50 |
| 240—No. 5 | 12.00 –13.00 | 12.00 –13.00 | 12.00 –13.00 |
| 280—No. 3 | 15.50 –16.50 | 15.50 –16.50 | 15.50 –16.50 |
| 280—No. 4 | 15.25 | 15.25 | 15.25 |
| 280—No. 5 | 14.00 –15.00 | 14.00 –15.00 | 14.00 –15.00 |
| 300—No. 5-6 | 17.00 | 17.00 | 17.00 |
| **GULF COASTAL Vis. Color** | | (Viscosity at 100°F., pour test 0) | |
| 100—No. 2 Unfilt. Pale | 7.25 – 7.50 | 7.25 – 7.50 | 7.25 – 7.50 |
| 200—No. 3 Unfilt. Pale | 10.50 –10.75 | 10.50 –10.75 | 10.50 –10.75 |
| 300—No. 3 Unfilt. Pale | 11.50 –11.75 | 11.50 –11.75 | 11.50 –11.75 |
| 500—No. 3½ Unfilt. Pale | 13.50 –13.75 | 13.50 –13.75 | 13.50 –13.75 |
| 750—No. 4 Unfilt. Pale | 15.75 –16.00 | 15.75 –16.00 | 15.75 –16.00 |
| 200—No. 5½ Red Oil | 8.50 – 8.75 | 8.50 – 8.75 | 8.50 – 8.75 |
| 300—No. 5½ Red Oil | 9.50 – 9.75 | 9.50 – 9.75 | 9.50 – 9.75 |
| 500—No. 6 Red Oil | 11.00 –11.25 | 11.00 –11.25 | 11.00 –11.25 |
| 750—No. 6 Red Oil | 13.75 –14.00 | 13.75 –14.00 | 13.75 –14.00 |
| **CALIFORNIA Vis. Color** | | (Viscosity at 100°F.) | |
| 100—No. 3 | 9.50 –10.00 | 9.50 –10.00 | 9.50 –10.00 |
| 200—No. 3 | 11.50 –12.00 | 11.50 –12.00 | 11.50 –12.00 |
| 300—No. 3 | 13.00 –13.50 | 13.00 –13.50 | 13.00 –13.50 |
| 450—No. 3 | 15.50 –16.00 | 15.50 –16.00 | 15.50 –16.00 |
| 550—No. 3 | 16.50 –17.00 | 16.50 –17.00 | 16.50 –17.00 |
| 600—No. 3 | 17.00 –17.50 | 17.00 –17.50 | 17.00 –17.50 |
| 200—No. 5 | 11.00 –11.50 | 11.00 –11.50 | 11.00 –11.50 |
| 300—No. 5 | 12.00 –12.50 | 12.00 –12.50 | 12.00 –12.50 |
| 400—No. 5 | 14.00 –14.50 | 14.00 –14.50 | 14.00 –14.50 |
| 500—No. 5 | 15.00 –15.50 | 15.00 –15.50 | 15.00 –15.50 |
| 600—No. 5 | 16.00 –16.50 | 16.00 –16.50 | 16.00 –16.50 |
| 700—No. 7 | 18.00 –18.50 | 18.00 –18.50 | 18.00 –18.50 |

## CYLINDER STOCKS

| **OKLAHOMA | | | |
|---|---|---|---|
| 190-200 Vis.at 210° Brt.St. | 31.00 –32.00 | 31.00 –32.00 | 31.00 –32.00 |
| 150-160 Vis.at210° Brt.St. | 25.00 –26.00 | 25.00 –26.00 | 25.00 |
| 600 E.St.140-150 Vis.-210° | 17.00 –18.00 | 17.00 –18.00 | 17.00 –18.00 |
| 600 St. Ref. Olive Green | 8.00 –10.00 | 8.00 –10.00 | 8.00 –10.00 |
| 600 St. Ref. Dark Green | 6.00 – 8.00 | 6.00 – 8.00 | 6.00 – 8.00 |
| Black Oil | 5.00 | 5.00 | 5.00 |
| **PENNSYLVANIA** | | (1-inch Immersion Test) | |
| 600 Steam Refined | 13.25 –14.00 | 13.00 –14.00 | 12.50 –13.50 |
| 650 Steam Refined | 14.50 –16.50 | 14.50 –16.50 | 14.50 –16.50 |
| 600 Flash | 18.50 –19.00 | 18.00 –19.50 | 18.00 –18.50 |
| 625 Flash | 27.50 –29.00 | 26.00 –29.00 | 26.00 –28.00 |
| 600 Warren E | 19.00 –20.00 | 19.00 –20.00 | 18.50 –19.00 |
| 600 Oil City E | 17.00 –18.50 | 18.00 –18.50 | 17.00 –18.00 |
| 600 D Filtered | 23.50 –24.00 | 24.00 | 22.50 –24.50 |
| Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No.8color | 36.50 –37.00 | 36.50 | 36.00 –36.50 |
| 40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted | 34.50 –35.00 | 34.50 | 34.00 –34.50 |

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations




# "I have already placed my order for next year so that I will be sure to have it"

THAT statement comes from Mr. L. E. Barringer of Belvidere, Illinois, in his letter dated April 23, 1928. In all Mr. Barringer says, "I am very much pleased to let you know the good success that I had with Eveready Prestone.

"I put Eveready Prestone in a good percentage of the radiators that I serviced this past season. I wish to congratulate you on being able to put out a real anti-freeze. Out of all that I sold, I haven't had a complaint. I have already placed my order for next year so that I will be sure to have it."

Last year the announcement of Eveready Prestone brought dealers such a storm of orders it was impossible to supply every demand. By ordering now you can be ready for business at the start next month of the big advertising campaign. Color pages in leading national magazines and, at the first sign of cold weather, full pages in more than two hundred and fifty newspapers throughout the country will feature Eveready Prestone.

Get your share of winter profits with a stock of the "perfect anti-freeze." Follow these suggestions for putting a car in condition for winter driving and you will build a steady, profitable anti-freeze business: Remove accumulated scale and rust from the cooling system. Tighten all parts of circulating system, including hose and pump connections, gaskets, expansion plates, drain cocks, pump glands and grease cups on water pump. Add water first, then Eveready Prestone and fill radiator only to within four inches of the top of the overflow pipe to prevent loss by expansion. There is nothing complicated or difficult about this service and it pays big dividends in customer-satisfaction. Complete directions are on the can. Get in touch with your jobber and order *now*.

*Manufactured for*

NATIONAL CARBON CO., INC., New York, N. Y.

*Branches:* ATLANTA, CHICAGO, KANSAS CITY, LONG ISLAND CITY, SAN FRANCISCO

*By* CARBIDE AND CARBON CHEMICALS CORPORATION

*Units of Union Carbide* UCC *and Carbon Corporation*

## EVEREADY PRESTONE

(TRADEMARK)

For the Preparation of

**The Perfect Anti-Freeze**

# Refinery Markets on Wax and Heavy Oil Products

**Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown**

***(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)***

## WAX

| PENNSYLVANIA | Prices Sept. 4 | Prices Aug. 27 | Prices Aug. 20 |
|---|---|---|---|
| Per pound, New York | | | |
| 122-124 white crude scale | 5.00 – 5.25 | 5.00 – 5.25 | 4.75 |
| 124-126 white crude scale | 5.25 | 5.00 – 5.125 | 4.75 |
| **OKLAHOMA** | | | |
| **124-126 White Crude Scale | 5.00 | 4.75 | 4 50 – 4.75 |
| **CALIFORNIA** | | | |
| White crude scale, per pound, ton lots | 6.00 – 6.50 | 6.00 – 6.50 | 6.00 – 6.50 |

## FUEL OIL

| PENNSYLVANIA | | | |
|---|---|---|---|
| 36-40 fuel oil | 4.625– 5.00 | 4.625– 4.875 | 4.75 – 5.00 |
| 30-34 fuel oil | 4.25 – 4.50 | 4.25 – 4.50 | 4.25 – 4.50 |
| 28-32 fuel oil | 4.125– 4.375 | 4.25 – 4.375 | 4.125– 4.50 |
| **OKLAHOMA** | | | |
| 38-40 straw distillate | 3.25 | 3.00 – 3.25 | 3.00 – 3.125 |
| 36-38 straw distillate | 3.00 | 2.875– 3.00 | 2.875 |
| 32-36 gas oil, straw | †2.50 – 2.75 | †2.50 – 2.75 | †2.50 – 2.75 |
| 32-36 dark gas oil | 2.375– 2.50 | 2.375– 2.50 | 2.375– 2.50 |
| 28-30 fuel oil (in bbls.) | $0.85 – 0.875 | $0.85 – 0.875 | $0.85 – 0.875 |
| 26-28 fuel oil (in bbls.) | $0.675– 0.725 | $0.675– 0.725 | $0.675– 0.725 |
| 24-26 fuel oil (in bbls.) | *$0.65 – 0.675 | **$0.65– 0.675 | **$0.65– 0.675 |
| 22-26 fuel oil (in bbls.) | *$0.575– 0.625 | **$0.575–0.625 | **$0.575–0.625 |
| 18-22 fuel oil (in bbls.) | *$0.55 – 0.60 | **$0.55– 0.60 | **$0.55– 0.60 |
| 16-18 fuel oil (in bbls.) | *$0.55 | **$0.55 | **$0.55 |
| 14-16 fuel oil (in bbls.) | *$0.55 | **$0.55 | **$0.55 |
| **KANSAS** (F. O. B. refinery Kansas destination.) | | | |
| 38-40 straw distillate | 3.50 – 3.625 | 3.50 – 3.625 | 3.50 – 3.625 |
| 36-38 straw distillate | 3.125– 3.375 | 3.125– 3.375 | 3.125– 3.375 |
| 32-36 gas oil | 2.625– 2.75 | 2.625– 2.75 | 2.625– 2.75 |
| 24-26 fuel oil | $0.75 – 0.80 | *$0.75– 0.80 | *$0.75– 0.80 |
| 18-22 fuel oil | $0.70 | *$0.70 | *$0.70 |
| **NORTH TEXAS** | | | |
| 38-40 straw distillate | 3.00 – 3.125 | 3.00 | 2.875– 3.00 |
| 32-36 gas oil, cracked | 2.375– 2.50 | 2.375– 2.50 | 2.25 – 2.375 |
| 32-36 gas oil, uncracked | 2.375– 2.50 | 2.375– 2.50 | 2.25 – 2.375 |
| 24-26 fuel oil (in bbls.) | $0.525– 0.55 | $0.525– 0.55 | $0.525– 0.55 |

| GULF COASTAL | Prices Sept. 4 | Prices Aug. 27 | Prices Aug. 20 |
|---|---|---|---|
| Fuel (in bbls.) | $1.20 –$1.25 | $1.20 –$1.25 | $1.20 –$1.25 |
| Gas oil | 4.25 – 4.375 | 4.25 – 4.375 | 4.25 – 4.375 |
| **NORTH LOUISIANA** (N. La., Ark. and Miss. destination) | | | |
| 32-36 gas oil, dark | 2.625– 2.875 | 2.625– 2.875 | 2.625– 2.875 |
| 32-36 gas oil, straw | 2.75 – 3.00 | 2.75 – 3.00 | 2.75 – 3.00 |
| 16-20 fuel oil (in bbls.) | $0.70 | $0.70 | $0.70 |
| **ARKANSAS** (Arkansas destination only) | | | |
| 32-36 gas oil, straw | 3.00 – 3.25 | 3.00 – 3.25 | 3.00 – 3.25 |
| 32-36 gas oil | 2.75 – 3.00 | 2.75 – 3.00 | 2.75 – 3.00 |
| 28-32 gas oil | 2.75 | 2.75 | 2.75 |
| Road Oil | $1.15 | $1.15 | $1.15 |
| **CALIFORNIA** (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more) | | | |
| 14-18 fuel oil (in bbls.) | $0.65 –$0.70 | $0.65 –$0.70 | $0.65 –$0.70 |
| 14-18 Bunker oil (in bbls.) | $0.80 –$1.00 | $0.80 –$1.00 | $0.80 –$1.00 |
| 30-34 gas oil (in bbls.) | $1.00 –$1.20 | $1.00 –$1.20 | $1.00 –$1.20 |
| 27 Plus Diesel oil (in bbls.) | $0.90 –$1.00 | $0.90 –$1.00 | $0.90 –$1.00 |

## PETROLATUMS

| PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. ⅝c to ¾c per pound less.) | Quotations of two refiners. | | In tank cars |
|---|---|---|---|
| Snow White | 8.50 | ††8.50 | 8.25 – 8.50 |
| Lily White | 7.50 | ††7.50 | 7.25 – 7.50 |
| Cream White | 6.50 | ††6.50 | 6.25 – 6.50 |
| Light Amber | 3.50 | ††3.50 | 3.50 – 3.625 |
| Amber | 3.25 | 3.25 | 3.25 |
| Red | 2.375– 3.00 | 2.375 – 3.00 | 2.75 – 3.00 |

## PETROLEUM COKE

****OKLAHOMA**

**(Per ton in car lots)**

| | | | |
|---|---|---|---|
| Lump | $4.50 –$5.00 | $4.50 –$5.00 | $4.50 – 5.00 |
| Still run | $3.00 | $3 00 | $3.00 |
| Breeze | $2.00 | $2.00 | $2.00 |

†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents Both Sales and Quotations

during the week moved to 6.50 cents a gallon in Oklahoma with some sales each day at 6.75 cents. The 42-44 w.w. grade also moved 0.125 cent a gallon to a minimum of 7 cents with some sales at 7.25 cents. This grade was extremely scarce.

### Distillates, Gas Oil

Mid-Continent refiners have begun to step up their distillate production slightly in anticipation of the fall and winter demand. While business has not shown a decided increase in volume to date, there has been a small amount of steady buying for storage, especially from jobbers in the larger stove distillate consuming territories.

Prices have advanced fractionally. This has been due in a large measure to the advance in prices of kerosenes. Refiners could make more money by cutting deeper into their distillate stocks for kerosene and naphthas with the price of kerosene at 6.50 cents and naphthas at 9 cents. Those making distillates, therefore, have advanced their prices to around 3.25 cents a gallon for the 38-40 straw grade, and to 3 cents for the 36-38 straw distillate.

Inquiries have begun to come into the field for light color, low cold test gas oils. A few contracts for this grade have been made for the season, and it is generally predicted a considerable quantity of gas oil will be used in the place of stove distillates this season. Many jobbers have successfully experimented with the zero cold test gas oil and found it acceptable for home heating.

No changes were noted in gas oil prices. The ordinary 32-36 gravity oil was in fair demand from industrials while two or three refiners continued to keep standing offers out at 2.375 cents a gallon for straight reduced goods which they could process in their cracking units.

### Fuel Oils

All grades of fuel oils were exceptionally steady all week, both in price and demand. Several refiners reported inquiries were more numerous for September delivery. Oklahoma refiners have reconciled themselves to the fact that a certain amount of west Texas fuel oil is moving into the normal Group 3 marketing territory and have ceased to go after this business by meeting some of the prices at which the Texas goods is offered. Fuel oil stocks meanwhile continued to increase for the Mid-Continent as a whole but with refiners making strenuous efforts to burn as much of their production as possible at their own plants, no refiner apparently is in distress for lack of storage facilities.

An increase in demand for the higher gravity oils also was noted. Inquiries also were for the low cold test goods and many industrial users are casting about for connections for the winter where they can be assured of a supply of low cold test fuel oil throughout the winter months.

### Neutral Oils and Cylinder Stocks

No changes were made in prices of neutral oils or cylinder stocks. Price of 150-160 vis. 210 bright stock was pegged at 25 to 26 cents a gallon. Two Oklahoma refiners reported they were virtually out of the picture as far as both neutrals and cylinder stocks were concerned.

### Oklahoma Wax

Demand for wax along the eastern seaboard and at the Gulf has been felt in Oklahoma sufficiently to put the price of 124-126 white crude scale goods up to a firm minimum of 5 cents a pound. At least three refiners sold goods at 5 cents a pound this week, while one sold a small quantity for September delivery at 5.125 cents. Inquiries have been received for both September and October delivery.

# Chicago Gasoline Is Unsettled

CHICAGO, Sept. 1.—Although kerosene was actually the strongest product in the Chicago resale market in the week ended Sept. 1, the gasoline situation commanded most of the trade's interest.

The gasoline market was unsettled throughout the week. The bulk of 58-60 U. S. Motor gasoline sales were made at 9.625 to 9.75 cents, with some reported as low as 9.375 cents and as high as 10 cents. So-called U. S. Motor gasolines under 9.625 cents, except in rare cases, was coming out of Texas and in many instances did not come up to specifications. Oklahoma refiners were holding firm at 9.75 cents to the jobbing trade. Their resale agents, however, were moving Oklahoma material under this figure. A few cars were reported as low as 9.50 cents.

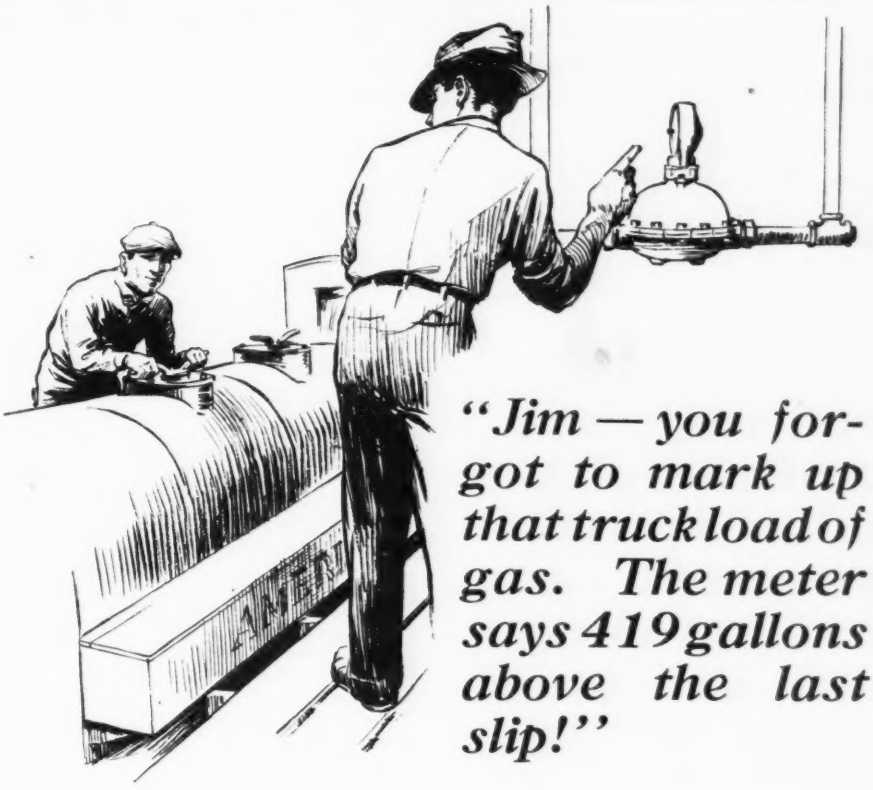
Spot demand for U. S. Motor was light all week. The majority of jobbers are buying on contracts, which enable them to get most of their gasoline around 1-cent under the going spot price. Jobbers who have been buying on the spot market in most cases were ordering only enough goods for their immediate requirements in hopes of an easing off in spot prices.

As spot buying has been light for the past two weeks and because fair weather is indicated for the Labor Day holiday, most of the trade predict an active spot demand when business is resumed Sept. 4.

Most refiners reported being in excellent shape as regards gasoline orders and some are behind on shipments. Others are selling only to regular customers. Only those moving a good portion of their goods on the spot market have expressed any concern as to the softening of the spot market and these, in the main, believe a recurrence of spot buying will bring the market back to a firm 9.75 cents.

Another incident which came in for considerable discussion was the proposed changes in the quantity discount agreement in Standard of Indiana territory. Opinion was divided as to what extent this would affect the current market, but all agreed that conditions in general would be benefited whether the tank car price improved or not.

The market on high test gasolines was quiet and prices showed no material change. The going price for 60-62, 437 e. p. gasoline was 9.875 to 10 cents all week. The 60-62, 400 e. p. grade opened Aug. 29 at 10.25 to 10.50 cents and sold mostly at 10.25 to 10.375 cents thereafter. Sales of 64-66, 375 e. p. gasoline were reported ranging from 10.875 to

*"Jim — you forgot to mark up that truck load of gas. The meter says 419 gallons above the last slip!"*

THAT'S where a Niagara Meter is efficient. We all make mistakes but the Niagara Meter *never* forgets.

Gasoline losses oftentimes are much too large to be solely attributed to shrinkage. Occasionally truck fillings or drum fillings are left unrecorded. Not intentionally—but just because someone forgets! And in most cases this usually results in losses which eat a big hole in the yearly profits.

In a recent letter received from a large, mid-western oil company, one of the officials said, "Niagara Gasoline Meters would, no doubt, enable us to locate shrinkages, and not only to locate them but stop them. These losses are now running much too high, and I am anxious to eliminate them. The accomplishment of such a feat would add much to our success."

You too, in your own business have probably been encountering excessive gasoline losses, but have not known how to stop them. Niagara Meters will do it. Tell us your problem and we will help you solve it. The coupon will bring you full information. Mail it today!

**BUFFALO METER COMPANY**

**2889 Main Street Buffalo, New York**

*The Coupon will bring you full information MAIL IT TODAY!*

# Niagara Meters

**Buffalo Meter Co., 2889 Main St., Buffalo, N. Y.**

☐ Please send us a copy of your Niagara Oil Meter Booklet.

Show us how Niagara Oil Meters can be adapted to the measuring of:

Name.....

Type of Business.....

Address.....

# Tank Wagon, Service Station Markets for Gasoline and Kerosene

***(OIL PRICE HANDBOOK has t.w. and s.s. markets for 1927, 1926, 1925, 1924 arranged for quick reference)***

These Prices in Effect Sept. 3, 1928, as Posted by Principal Marketing Companies

## S.O. NEW JERSEY TERRITORY

| | Gasoline | | | | Oil |
|---|---|---|---|---|---|
| | | Total | | | |
| | T.W. | Tax | T.W. | S.S. | T.W. |
| Atlantic City, N. J. | 17 | 2 | 19 | 20 | 14 |
| Newark, N. J. | 17 | 2 | 19 | 20 | 14 |
| Annapolis, Md. | 17 | 4 | 21 | 23 | 14 |
| Baltimore, Md. | 17 | 4 | 21 | 23 | 11 |
| Cumberland, Md. | 17 | 4 | 21 | 23 | 14 |
| Washington, D. C. | 17 | 2 | 19 | 21 | 14 |
| Danville, Va. | 17 | 5 | 22 | * | 14 |
| Norfolk, Va. | 14 | 5 | 19 | 20 | 14 |
| Richmond, Va. | 17 | 5 | 22 | 24 | 14 |
| Roanoke, Va. | 17 | 5 | 22 | 24 | 14 |
| Petersburg, Va. | 17 | 5 | 22 | 24 | 14 |
| Charleston, W. Va. | 17 | 4 | 21 | 23 | 14 |
| Keyser, W. Va. | 17 | 4 | 21 | 23 | 14 |
| Parkersburg, W. Va. | 17 | 4 | 21 | 23 | 14 |
| Wheeling, W. Va. | 17 | 4 | 21 | 23 | 14 |
| Charlotte, N. C. | 17 | 4 | 21 | 23 | 14 |
| Hickory, N. C. | 17 | 4 | 21 | 23 | 14 |
| Mt. Airy, N. C. | 17 | 4 | 21 | 23 | 14 |
| Salisbury, N. C. | 17 | 4 | 21 | 23 | 14 |
| Charleston, S. C. | 17 | 5 | 22 | 24 | 14 |
| Columbia, S. C. | 17 | 5 | 22 | 24 | 14 |

*Dealers set own prices. S. O. New Jersey does not operate station.

## S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

| | | | | | |
|---|---|---|---|---|---|
| New York City | 18 | 0 | 18 | *20 | 15 |
| Albany, N. Y. | 18 | 0 | 18 | 21 | 15 |
| Buffalo, N. Y. | 18 | 0 | 18 | 20 | 15 |
| Rochester, N. Y. | 18 | 0 | 18 | 20 | 13 |
| Syracuse, N. Y. | 18 | 0 | 18 | 20 | 15 |
| Boston, Mass. | 18 | 0 | 18 | 20 | 15 |
| Augusta, Me. | 18 | 4 | 22 | 24 | 15 |
| Manchester, N. H. | 18 | 4 | 22 | 24 | 15 |
| Burlington, Vt. | 18 | 3 | 21 | 23 | 15 |

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

## ATLANTIC REFINING

| | | | | | |
|---|---|---|---|---|---|
| Pittsburgh, Pa. | 18 | * | 18 | *23 | 15 |
| Philadelphia, Pa. | 18 | * | 18 | *23 | 15 |
| Allentown, Pa. | 18 | * | 18 | *23 | 15 |
| Erie, Pa. | 18 | * | 18 | *23 | 15 |
| Scranton, Pa. | 18 | * | 18 | *23 | 15 |
| Altoona, Pa. | 18 | * | 18 | *23 | 15 |
| Dover, Del. | 18 | 3 | 21 | 23 | 15 |
| Wilmington, Del. | 18 | 3 | 21 | 23 | 15 |
| Providence, R. I. | 18 | 2 | 20 | 22 | 15 |
| Boston, Mass. | 18 | 0 | 18 | 20 | 15 |
| Springfield, Mass. | 18 | 0 | 18 | 20 | 15 |
| Worcester, Mass. | 18 | 0 | 18 | 20 | 15 |
| Hartford, Conn. | 18 | 2 | 20 | 22 | 14 |
| New Haven, Conn. | 18 | 2 | 20 | 22 | 15 |

*3-cent state tax is collected by retail dealer and paid by him directly to state.

## S. O. KENTUCKY

| | | | | | |
|---|---|---|---|---|---|
| Ashland, Ky. | 17 | 5 | 22 | 24 | 15.5 |
| Catlettsburg, Ky. | 17 | 5 | 22 | 24 | 15.5 |
| Lexington, Ky. | 16 | 5 | 21 | 23 | 15.5 |
| Louisville, Ky. | 16 | 5 | 21 | 23 | 14 |
| Covington, Ky. | 17 | 5 | 22 | 22 | 15.5 |
| Clarksdale, Miss. | 17 | 4 | 21 | 23 | 13 |
| Gulfport, Miss†† | 18.5 | 4 | 22.5 | 24.5 | 14 |
| Jackson, Miss. | 17 | 4 | 21 | 23 | 14.5 |
| Natchez, Miss. | 16.5 | 4 | 20.5 | 22.5 | 14 |
| Vicksburg, Miss. | 16.5 | 4 | 20.5 | 22.5 | 14 |
| Birmingham, Ala. | 16 | 4 | 20 | 22 | 16 |
| Mobile, Ala‡ | 18 | 4 | 22 | 24 | 15 |
| Montgomery, Ala.* | 19 | 4 | 23 | 25 | 16.5 |
| Atlanta, Ga. | 18 | 4 | 22 | 24 | †16.5 |
| Augusta, Ga. | 18 | 4 | 22 | 24 | †15.5 |
| Macon, Ga. | 18 | 4 | 22 | 24 | †16.5 |
| Savannah, Ga. | 17 | 4 | 21 | 21 | †14.5 |
| Jacksonville, Fla. | 17 | 5 | 22 | 24 | 13.5 |
| Miami, Fla. | 18 | 5 | 23 | 25 | 15.5 |
| Tampa, Fla. | 17 | 5 | 22 | 25 | 13.5 |
| Pensacola, Fla.** | 18 | 5 | 23 | 25 | 13.5 |

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

## S. O. INDIANA

| | Gasoline | | | | Oil |
|---|---|---|---|---|---|
| | | Total | | | |
| | T.W. | Tax | T.W. | S.S. | T.W. |
| Chicago, Ill. | 15 | 0 | 15 | 17 | 12 |
| Decatur, Ill. | 15.2 | 0 | 15.2 | 17.2 | 12.1 |
| E. St. Louis, Ill. | 14.1 | 0 | 14.1 | 16.35 | 11.2 |
| Joliet, Ill. | 15.4 | 0 | 15.4 | 17.4 | 12.3 |
| Peoria, Ill. | 15.2 | 0 | 15.2 | 17.2 | 12.1 |
| Quincy, Ill. | 15.2 | 0 | 15.2 | 17.2 | 11.9 |
| Indianapolis, Ind. | 15.2 | 3 | 18.2 | 20.2 | 13.2 |
| Evansville, Ind. | 15 | 3 | 18 | 20 | 13 |
| South Bend, Ind. | 15.4 | 3 | 18.4 | 20.4 | 13.4 |
| Detroit, Mich. | 15.8 | 3 | 18.8 | 20.8 | 13.7 |
| Grand Rapids, Mich. | 15.7 | 3 | 18.7 | 20.7 | 13.6 |
| Saginaw, Mich. | 15.9 | 3 | 18.9 | 20.9 | 13.8 |
| Green Bay, Wis. | 15.6 | 2 | 17.6 | 19.6 | 12.4 |
| Madison, Wis. | 15.3 | 2 | 17.3 | 19.3 | 12.1 |
| Milwaukee, Wis. | 15.1 | 2 | 17.1 | 19.1 | 11.9 |
| La Crosse, Wis. | 16.2 | 2 | 18.2 | 20.2 | 13 |
| Minneapolis, Minn. | 16.2 | 2 | 18.2 | 20.2 | 12.9 |
| Duluth, Minn. | 16.5 | 2 | 18.5 | 20.5 | 12.9 |
| Mankato, Minn. | 16.1 | 2 | 18.1 | 20.1 | 12.7 |
| Des Moines, Ia. | 15.5 | 3 | 18.5 | 20.5 | 12.3 |
| Davenport, Ia. | 15.5 | 3 | 18.5 | 20.5 | 12.3 |
| Sioux City, Ia. | 15.1 | 3 | 18.1 | 20.1 | 11.9 |
| Mason City, Ia. | 15.5 | 3 | 18.5 | 20.5 | 12.3 |
| St. Louis, Mo. | *14.6 | 2 | 16.6 | 18.9 | 11.3 |
| Kansas City, Mo. | †15.9 | 2 | 17.9 | 19.9 | 10.6 |
| St. Joseph, Mo. | †15.5 | 2 | 17.5 | 19.5 | 11.2 |
| Fargo, N. D. | 17.9 | 2 | 19.9 | 21.9 | 14.9 |
| Grand Forks, N. D. | 18.2 | 2 | 20.2 | 22.2 | 15.2 |
| Minot, N. D. | 17.9 | 2 | 19.9 | 21.9 | 14.9 |
| Pierre, S. D. | 16.5 | 4 | 20.5 | 22.5 | 13.9 |
| Huron, S. D. | 16.5 | 4 | 20.5 | 22.5 | 13.9 |
| Wichita, Kans. | 13.8 | 2 | 15.8 | 17.8 | 10.8 |
| Bartlesville, Okla. | 13.5 | 3 | 16.5 | 18.5 | 10.5 |

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline is ½c for 750 gals. or more a month; 1c for 2,000 gals. or more a month; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month. All discounts adjusted annually.

*Includes city tax of ½c.

†Includes city tax of 1c.

## CONTINENTAL OIL

| | | | | | |
|---|---|---|---|---|---|
| Denver, Colo. | 16 | 3 | 19 | 22 | 14.5 |
| Pueblo, Colo. | 16 | 3 | 19 | 22 | 14.5 |
| Grand Junc., Colo. | 19.5 | 3 | 22.5 | 25.5 | 18 |
| Casper, Wyo. | 16 | 3 | 19 | 22 | 13 |
| Cheyenne, Wyo. | 17 | 3 | 20 | 23 | 14.5 |
| Butte, Mont. | 20.5 | 3 | 23.5 | 26.5 | 19 |
| Helena, Mont. | 20.5 | 3 | 23.5 | 26.5 | 19 |
| Salt Lake City, Utah | 18.5 | 3½ | 22 | 25 | 17 |
| Boise, Ida. | 20.5 | 4 | 24.5 | 27.5 | 19 |
| Twin Falls, Ida. | 20.5 | 4 | 24.5 | 27.5 | 19 |
| Albuquerque, N. M. | 17 | 5 | 22 | 25 | 17 |

## S. O. CALIFORNIA

| | | | | | |
|---|---|---|---|---|---|
| Phoenix, Ariz. | 12 | 4 | 16 | 20 | 21.5 |
| Los Angeles, Cal. | 13.5 | 3 | 16.5 | 20.5 | 15.5 |
| Fresno, Cal. | 14 | 3 | 17 | 21 | 16.5 |
| San Francisco, Cal. | 14 | 3 | 17 | 21 | 15.5 |
| Reno, Nev. | 18 | 4 | 22 | 26 | 19 |
| Portland, Ore. | 14.5 | 3 | 17.5 | 21.5 | 16.5 |
| Seattle, Wash. | 14.5 | 2 | 16.5 | 20.5 | 16.5 |
| Spokane, Wash. | 18.5 | 2 | 20.5 | 24.5 | 20.5 |
| Tacoma, Wash. | 14.5 | 2 | 16.5 | 20.5 | 16.5 |

## S. O. LOUISIANA

| | | | | | |
|---|---|---|---|---|---|
| Little Rock, Ark. | 16 | 5 | 21 | 23 | 13 |
| Alexandria, La. | 15 | 2 | 17 | 19 | †15 |
| Baton Rouge, La. | 14 | 2 | 16 | 18 | †13.5 |
| Lake Charles, La. | 15.5 | 2 | 17.5 | 19.5 | †15 |
| New Orleans, La. | *15.5 | 2 | *17.5 | *19.5 | †15 |
| Shreveport, La. | 15.5 | 2 | 17.5 | 19.5 | †14 |
| Lafayette, La. | 15 | 2 | 17 | 19 | †14.5 |
| Bristol, Tenn. | 18 | 3 | 21 | 23 | 14 |
| Chattanooga, Tenn. | 17.5 | 3 | 20.5 | 22.5 | 15 |
| Knoxville, Tenn. | 18 | 3 | 21 | 23 | 15 |
| Nashville, Tenn. | 17 | 3 | 20 | 22 | 15 |
| Memphis, Tenn. | 14 | 3 | 17 | 19 | 14 |

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

## S. O. OHIO

| | Gasoline | | | | Oil |
|---|---|---|---|---|---|
| | | Total | | | |
| | T.W. | Tax | T.W. | S.S. | T.W. |
| All Ohio points | 16 | 3 | 19 | 20 | 14 |

## S. O. NEBRASKA

| | | | | | |
|---|---|---|---|---|---|
| Omaha, Neb. | 15.25 | 2 | 17.25 | 19.25 | 12.25 |
| McCook | 16.75 | 2 | 18.75 | 20.75 | 13.75 |
| Norfolk | 15.75 | 2 | 17.75 | 19.75 | 12.75 |
| North Platte | 16.75 | 2 | 18.75 | 20.50 | 13.50 |
| Scottsbluff | 16.75 | 2 | 18.75 | 20.75 | 13.25 |

## MAGNOLIA PETROLEUM

| | | | | | |
|---|---|---|---|---|---|
| Muskogee, Okla. | 16 | 3 | 19 | 21 | 11 |
| Oklahoma City | 15 | 3 | 18 | 20 | 11 |
| Tulsa, Okla. | 14 | 3 | 17 | 19 | 11 |
| Fort Smith, Ark.* | 14 | *3 | 17 | 19 | 13 |
| Little Rock, Ark. | 16 | 5 | 21 | 23 | 13 |
| Texarkana, Ark.* | 14.5 | *3 | 17.5 | 21.5 | 13 |
| Dallas, Tex. | 14 | 3 | 17 | 21 | 11 |
| Fort Worth, Tex. | 14 | 3 | 17 | 20 | 11 |
| Houston, Tex. | 14 | 3 | 17 | 21 | 15 |
| San Antonio, Tex. | 15 | 3 | 18 | 21 | 10 |
| El Paso, Tex. | 15 | 3 | 18 | 21 | 16 |

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

## V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

| | Oleum Spirits | V.M.&P. Naphtha | Cleaner Naphtha |
|---|---|---|---|
| Chicago | 14.7 | 16.2 | 18 |
| Detroit | 16.4 | 17.9 | 19.7 |
| Kansas City | †14.9 | †16.4 | †18.2 |
| Milwaukee | 15.4 | *18.9 | *20.7 |
| Minneapolis | *18.7 | *20.2 | *22 |
| St. Louis | 14.6 | 16.1 | 17.9 |
| New York | | 20 | .... |

*Includes 2c state tax. †Includes 1c city tax.

# CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

### ONTARIO

| | Gasoline | | | | Oil |
|---|---|---|---|---|---|
| | | Total | | | |
| | T.W. | Tax | T.W. | S.S. | T.W. |
| Toronto | 20.5 | 3 | 23.5 | 27 | 22 |
| Ottawa | 20.5 | 3 | 23.5 | 27 | 22 |
| Cochrane | 25.5 | 3 | 28.5 | .. | 27 |
| Ft. William | 23.5 | 3 | 26.5 | 30 | 23.5 |

### MANITOBA

| | | | | | |
|---|---|---|---|---|---|
| Winnipeg | 22.5 | 3 | 25.5 | 29 | 22.5 |

### SASKATCHEWAN

| | | | | | |
|---|---|---|---|---|---|
| Regina | 27 | 3 | 30 | 34 | 27 |

### ALBERTA

| | | | | | |
|---|---|---|---|---|---|
| Edmonton | 27.5 | 3 | 30.5 | 34 | 27.5 |
| Calgary | 22.5 | 3 | 25.5 | 29 | 22.5 |

### BRITISH COLUMBIA

| | | | | | |
|---|---|---|---|---|---|
| Vancouver | 21 | 3 | 24 | 28 | 22 |

### QUEBEC

| | | | | | |
|---|---|---|---|---|---|
| Montreal | 21.5 | 5 | 26.5 | 30 | 22 |
| Quebec City | 22.5 | 5 | 27.5 | 31 | 23 |
| Three Rivers | 22.5 | 5 | 27.5 | 31 | 23 |

### NEW BRUNSWICK

| | | | | | |
|---|---|---|---|---|---|
| St. John | 23.5 | 3 | 26.5 | 30 | 25 |
| Moncton | 23.5 | 3 | 26.5 | 30 | 25 |

### NOVA SCOTIA

| | | | | | |
|---|---|---|---|---|---|
| Halifax | 23.5 | 5 | 28.5 | 32 | 25 |
| Sydney | 23.5 | 5 | 28.5 | 32 | 25 |

### PRINCE EDWARD ISLAND

| | | | | | |
|---|---|---|---|---|---|
| Charlottetown | 23.5 | 5 | 28.5 | 32 | 25 |

Note: In districts surrounding these points 1c additional is added to city price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both Colorado, 1/10c on both; Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska 3/50 to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

11.25 cents but the bulk of sellers were getting 11 cents.

Kerosene was the most active product in the market. A good seasonal demand was reported in practically all quarters and several buyers reported a comparative scarcity of this product. Quite a few refiners were accepting orders only from regular customers and one or two others were refusing to sell. A few refiners were buying kerosene to supply their trade. The market on 41-43 w.w. kerosene was apparently pegged at 6.50 cents, although a few sellers were getting 6.625 cents.

Distillates showed the most strength in the heavy oils this week. While no actual price advances were recorded, the market was firm and sellers reported an improved demand, mostly from jobbers who were storing this product in anticipation of winter's demand. Sales of 38-40 straw distillate were made mostly at 3.125 to 3.25 cents over the week.

Gas oils showed little change in either price or demand. Most sellers reported demand light, although prices were holding firm. One refiner reported the sale of 50 cars of ordinary dark gas oil at 2.50 cents for resale purposes. Ordinary 32-36 dark gas oil brought 2.50 to 2.625 cents. The prevailing price for 32-36 dark zero was 2.625 to 2.75 cents and the 32-36 straw zero was bringing 2.75 to 3 cents.

A firmer tone was apparent in the fuel oil market, although prices remained generally unchanged. Continued encroachment of high sulfur fuels into this territory is holding down the market for the Oklahoma products with a low sulfur content. Good industrial demand for September fuels was reported by most sellers. Fuel oil prices over the week were: 28-30, $0.80 to $0.85; 24-26, $0.65 to $0.675; 22-26, $0.625 to $0.65; 18-22, $0.55 to $0.625. Smackover was quoted arbitrarily at $0.825.

Fair weather will be the rule the first half of next week in the Standard of Indiana territory, with a shower period during the latter half, says the forecast of the Chicago weather bureau. The temperatures will be near the seasonal normal all week.

## Week's Price Changes Tank Wagon Markets

### Gasoline Changes

**Standard of Kentucky**—T.w. and s.s. prices gasoline advanced 1 cent, Kentucky and Mississippi, **Aug. 30.** Last previous general change in Mississippi was a 1 cent advance on **July 30** and in Kentucky was 1 cent advance on **Aug. 3.**

* * *

### Kerosene Changes

**Atlantic Refining**—Kerosene advanced 1 cent, Pennsylvania and Delaware, making new t.w. price generally 15 cents, **Aug. 29.** Last previous change was a 1 cent advance on **June 14.**


# Up Goes Your Gallonage

*Motorists buy when they see these glowing tubes showing oils in their true colors.*

**DAVIS MASTER SILENT Oil Fountain**

contacts more sales in its every progressive feature:

The properly labeled oil is dispensed in plain sight of the motorists. Quicker servicing, as oil is drawn from either side. Illuminates oil from inside of glass tubes. Gleaming with beauty, cleanliness, efficiency. Makes the station outstanding. Pays for itself again and again in

*Increased Profits*

8 and 4-unit types supplied from separate storage.

**DAVIS SELF-CONTAINED FOUNTAIN**

as illustrated, has everything built in. Installed in 5 to 6 hours time. No excavation of concrete. Two 24-gallon and two 12-gallon tanks and two heaters in base of fountain.

*Write for full particulars and prices*

The Davis & Gant Manufacturing Co.
1604 Broadway, Denver, Colo.



# USED GAS PUMPS

PISTON AND VISIBLES—VARIOUS MAKES
ALWAYS ON HAND

*Prices very Reasonable*

**Address H. W. Vogt**

**MILWAUKEE TANK WORKS**
**Milwaukee, Wis.**

# Crude Oil Prices (in Effect Sept. 3)

*(Crude prices for years 1924-1925-1926-1927 in OIL PRICE HANDBOOK published annually)*

### EASTERN FIELDS

**Posted by Joseph Seep Purchasing Agency)**

| | |
|---|---|
| Penna. Grade Oil in New York Transit Lines (Allegheny, N. Y. District) | $3.20 |
| Bradford District Oil in National Transit Lines (Bradford District) | 3.20 |
| Penna. Grade Oil in National Transit Lines (Other Pennsylvania) | 3.10 |
| Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) | 3.10 |
| Penna. Grade Oil in Eureka Pipe Lines (West Virginia) | 3.00 |
| Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district) | 2.85 |
| Keister Grade in National Transit Lines (Butler Co.) | 1.20 |
| Cabell Grade in Eureka Pipe Lines (West Virginia) | 1.45 |
| Corning Grade in Buckeye Pipe Lines (Ohio) | 1.80 |
| Corning, O., heavy grade | 1.70 |
| Somerset Oil in Cumberland Pipe Lines (Kentucky) | 1.70 |
| Ragland Grade in Cumberland Pipe Lines (Kentucky) | .95 |

**(Posted by Stoll Oil Refining Co.)**

| | |
|---|---|
| Oil City, Ky., oil in Stoll lines | $1.65 |

### CENTRAL STATES FIELDS

**Posted by Ohio Oil Co.**

Effective July 27, 1928

| | | | |
|---|---|---|---|
| Wooster | $1.67 | Princeton | $1.55 |
| Lima | 1.60 | Illinois | 1.55 |
| Waterloo | 1.20 | Plymouth | 1.28 |
| Indiana | 1.37 | West Kentucky | 1.48 |

### CANADIAN CRUDE

**Posted by Imperial Oil Refineries, Ltd.**

| | |
|---|---|
| Petrolia | $2.00 |
| Oil Springs | 2.07 |

### OKLAHOMA, KANSAS and NORTH TEXAS

**Prices of Prairie Oil & Gas Co.**
**(In Oklahoma, Kansas, North and East Central Texas)**

Effective July 26, 1928

| | | | |
|---|---|---|---|
| Below 25 | $0.60 | 35-35.9 | $1.31 |
| 25-25.9 | 0.67 | 36-36.9 | 1.36 |
| 26-26.9 | 0.74 | 37-37.9 | 1.41 |
| 27-27.9 | 0.81 | 38-38.9 | 1.46 |
| 28-28.9 | 0.88 | 39-39.9 | 1.51 |
| 29-29.9 | 0.95 | 40-40.9 | 1.56 |
| 30-30.9 | 1.02 | 41-41.9 | 1.61 |
| 31-31.9 | 1.09 | 42-42.9 | 1.66 |
| 32-32.9 | 1.16 | 43-43.9 | 1.71 |
| 33-33.9 | 1.21 | 44 and above | 1.76 |
| 34-34.9 | 1.26 | | |

**Humble Oil & Refining Co. Prices**

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

July 26, same schedule as Prarie.

| | |
|---|---|
| Mirando, Tex. | $1.00 |

**Magnolia Petroleum Co.**

(In Oklahoma, Kansas and North and East Central Texas)

July 26, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

| | | | |
|---|---|---|---|
| Below 25 | $0.60 | 26-26.9 | 0.74 |
| 25-25.9 | 0.67 | 27-29.9 | 0.75 |
| 30-30.9 | | | 0.90 |
| 31-31.9 | | | 1.05 |
| Glasscock, Crane, Upton, Winkler Counties | | | 0.65 |
| Chalkfield (Howard Co.) | | | 0.80 |
| Iatan district | | | 0.93 |
| Corsicana heavy | | | 1.00 |

**Carter Oil Co.**

(Oklahoma and Kansas)

July 26, same schedule as Prairie except Carter does not post oil below 25.

### PANHANDLE, TEXAS

**Humble Oil & Refining Co.**

Effective July 26, 1928

Hutchinson and Carson Counties:

| | | | |
|---|---|---|---|
| Below 32 | $0.69 | 38-38.9 | $1.06 |
| 32-32.9 | 0.76 | 39-39.9 | 1.11 |
| 33-33.9 | 0.81 | 40-40.9 | 1.16 |
| 34-34.9 | 0.86 | 41-41.9 | 1.21 |
| 35-35.9 | 0.91 | 42-42.9 | 1.26 |
| 36-36.9 | 0.96 | 43-43.9 | 1.31 |
| 37-37.9 | 1.01 | 44 and above | 1.36 |

Wheeler County:

| | | | |
|---|---|---|---|
| Below 30 | $0.65 | 37-37.9 | $1.11 |
| 30-30.9 | 0.72 | 38-38.9 | 1.16 |
| 31-31.9 | 0.79 | 39-39.9 | 1.21 |
| 32-32.9 | 0.86 | 40-40.9 | 1.26 |
| 33-33.9 | 0.91 | 41-41.9 | 1.31 |
| 34-34.9 | 0.96 | 42-42.9 | 1.36 |
| 35-35.9 | 1.01 | 43-43.9 | 1.41 |
| 36-36.9 | 1.06 | 44 and above | 1.46 |

Gray County:

| | | | |
|---|---|---|---|
| Below 29 | $0.68 | 37-37.9 | 1.21 |
| 29-29.9 | 0.75 | 38-38.9 | 1.26 |
| 30-30.9 | 0.82 | 39-39.9 | 1.31 |
| 31-31.9 | 0.89 | 40-40.9 | 1.36 |
| 32-32.9 | 0.96 | 41-41.9 | 1.41 |
| 33-33.9 | 1.01 | 42-42.9 | 1.46 |
| 34-34.9 | 1.06 | 43-43.9 | 1.51 |
| 35-35.9 | 1.11 | 44 and above | 1.56 |
| 36-36.9 | $1.16 | | |

### WEST TEXAS

**Humble Oil & Refining Co.**

Effective July 26, 1928

| | |
|---|---|
| Winkler, Crane, Upton, Crockett, and Pecos Counties | $0.65 |

### NORTH LOUISIANA—ARKANSAS FIELDS

**Prices of Standard Oil Co. of Louisiana**

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective July 26, 1928

| | | | |
|---|---|---|---|
| Below 28 | $0.81 | 36-36.9 | $1.36 |
| 28-28.9 | 0.88 | 37-37.9 | 1.41 |
| 29-29.9 | 0.95 | 38-38.9 | 1.46 |
| 30-30.9 | 1.02 | 39-39.9 | 1.51 |
| 31-31.9 | 1.09 | 40-40.9 | 1.56 |
| 32-32.9 | 1.16 | 41-41.9 | 1.61 |
| 33-33.9 | 1.21 | 42-42.9 | 1.66 |
| 34-34.9 | 1.26 | 43-43.9 | 1.71 |
| 35-35.9 | 1.31 | 44 and above | 1.76 |

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

| | |
|---|---|
| Smackover, below 24 | $0.75 |
| do 24 and above | .90 |
| Bellevue | 1.25 |
| *Urania, La. | .85 |
| †East El Dorado | 0.75 |

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La. Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia; on Feb. 6 by La. Oil Refg. Corp.

Aug. 8 The Texas Co., same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.67; 26-26.9, $0.74; 27-27.9, $0.81.

Aug. 7 Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

### STEPHENS, ARKANSAS

**Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.**

Effective Aug. 2, 1928

| | | | |
|---|---|---|---|
| Below 28 | $0.75 | 30-30.9 | $0.87 |
| 28-28.9 | 0.79 | 31-31.9 | 0.91 |
| 29-29.9 | 0.84 | 32 and above | 0.95 |

### GULF COASTAL

**Posted by Humble Oil & Refining Co.**

Effective March 14, 1927

| | | | |
|---|---|---|---|
| Grades A | $1.20 | 29-29.9 | $1.25 |
| Grades B: | | 30-30.9 | 1.27 |
| Below 25 | 1.15 | 31-31.9 | 1.29 |
| 25-25.9 | 1.17 | 32-32.9 | 1.31 |
| 26-26.9 | 1.19 | 33-33.9 | 1.33 |
| 27-27.9 | 1.21 | 34-34.9 | 1.35 |
| 28-28.9 | 1.23 | 35 and above | 1.37 |

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

## Davis is Superintendent Of Marland Refinery

PONCA CITY, Sept. 1.—L. L. Davis, formerly assistant general superintendent of the Marland Refining Co. plant, has been made superintendent to succeed Wayne P. Rice. Mr. Rice resigned to supervise the construction and operation of the proposed new refinery at Big Spring, Tex., to be built by Cosden & Co.

Mr. Davis has been in the Marland organization since January, 1927. For six years prior to that he was with the Pierce Petroleum Corp. as a technologist and in the sales division. Mr. Davis entered the oil industry in 1917 with the Crew Levick Co. and after a year with that company was made a part of the technical staff of the Empire Oil & Refining Co.

Fred G. Fellows, resident engineer at the Marland plant, has been promoted to the position of assistant general superintendent vacated by Mr. Davis. His place will be taken in turn by M. E. Clawson.

Mr. Rice, who has just left the Marland Co., has been at the Ponca City plant since it was being built. He was foreman of construction work in 1917 and later was made general superintendent. During the 11-year period the plant has grown from a small skimming plant to one of the largest units in the Mid-Continent.

## Crude Price Changes

LOUISVILLE—On Sept. 1 Stoll Oil Refining Co. advanced Oil City, Ky. crude 10 cents per barrel, making new price $1.65 per barrel.

## Correction

Due to typographical error, price of N. Texas 56-58, 450 e.p. gasoline as of Aug. 20 in the refinery market table of the Aug. 29 issue of NATIONAL PETROLEUM NEWS, page 90, was shown as 9.00 cents. Correct price on Aug. 20 was 9.00 to 9.25 cents.

In the Eastern Domestic Market table, page 109 of the Aug. 29 issue of NATIONAL PETROLEUM NEWS, prices of water white kerosene at New York and Philadelphia were shown at 8 cents flat as of Aug. 27. Correct prices on that date should have been 8.50 cents.

---

PITTSBURGH, Sept. 4.—Myron Evans, manager and assistant secretary of the Island Petroleum Co., returned today from a two weeks' vacation at Dunkirk, New York.

# Log of World's Deepest Well—8255 Feet

*THE world's deepest oil well—the B-1 University of the Texon-Group 1 companies in Reagan county Texas, has now reached the depth of 8255 feet. A story on this well was published on page 28 of the Aug. 29 issue of* NATIONAL PETROLEUM NEWS.

*The well is in the Big Lake field. It was drilled with 10,000 feet of 1⅛-inch drilling line specially manufactured by the Black Wire Rope Co. and 10,000 feet of special sand line also was made by the same company for the well.*

*An 81-foot derrick of the Lee C. Moore tubular type is used and the well is equipped with twin Westinghouse oil well motors, 25-65 horsepower, 440 volt, 60 cycle, 3 phase. The log of the well, together with the engine, belt and bull rope record, is published herewith.*

### University Well No. 1-B, Reagan County, Texas

**Location: 250 feet from west, and 2728 feet from north lines of Section 36, Block 9**

**Elevation: 2733.6**

**Commenced: Feb. 8, 1926**

| | |
|---|---|
| Yellow surface | 10 |
| Shells | 60 |
| Blue Gumbo | 100 |
| Hard Blue Lime | 150 |
| Soft White Lime | 300 |
| Sand —(Water) | 375 |
| Sand and Red Rock Broken | 510 |
| Red Rock Caving | 548 |
| Sand—(Water) | 565 |
| Sand and Lime | 650 |
| Red Rock | 700 |
| Sandy Shale | 720 |
| Sand—(Water) 4 BWPH | 765 |
| Red Rock | 825 |
| Sand—(Water) 4 BWPH | 840 |
| Red Rock | 1050 |
| Lime | 1070 |
| Red Rock (Top Salt) | 1110 |
| Salt | 1655 |
| Red Rock Caving | 1720 |
| Lime | 1728 |
| Salt | 1740 |
| Red Rock and Shells | 2080 |
| Red Rock and Salt | 2290 |
| Red Sand and Lime | 2360 |
| Lime | 2385 |
| Sand and Red Rock | 2425 |
| Red Rock | 2440 |
| Red Sand | 2450 |
| Hard Sand | 2462 |
| OIL SHOW | 2464 |
| Oil | 2469 |
| 400,000 Cu. Ft. Gas | 2461-2466 |

33,975 barrels oil produced from this depth.

Dropped string of 3" Tubing and Rods 300' at 2466'.

Fished out tubing, rods and 45' of 5 3/16" Line with 5 3/16" to 6⅝" swedge nipple and 6⅝" shoe on top. Bottom joints perforated with perforated bull plug in bottom joint.

| | |
|---|---|
| Red Sand | 2575 |
| Sand | 2580 |
| Shale | 2590 |
| Sand and Lime | 2600 |
| Sandy Shells | 2630 |
| Red Rock and Sand | 2650 |
| Red Rock | 2665 |
| Lime | 2670 |
| Gritty Lime | 2682 |
| Gritty Lime with Sand | 2700 |
| Sandy Shale | 2710 |
| Shale | 2726 |
| Lime | 2740 |
| Shale | 2760 |
| Lime | 2765 |
| Shale | 2770 |
| Lime | 2820 |
| Sand and Lime | 2840 |
| Sand and Lime and Shale | 2850 |
| Lime | 2900 |
| Sand and Lime | 2920 |
| GAS | 2900-2910 |
| Lime Broken | 2950-2980 |
| Sand, Shells and Shale | 2980 |
| Sandy Lime (TOP SECOND PAY) | 3020 |
| Sandy Shale | 3050 |
| Dark Shale | 3070 |
| Lime | 3095 |
| Broken Lime Shells | 3123 |
| Broken Lime Shells | 3148 |
| Hard Gray Lime | 3165 |
| Gray Lime | 3190 |
| Hard Gray Lime | 3290 |
| Lime | 3306 |
| Slate | 3316 |
| Broken Lime Shells | 3340 |
| Lime Shells | 3360 |
| Sand | 3370 |
| Lime | 3375 |
| Shale | 3390 |
| Lime | 3395 |
| Sandy Lime | 3400 |
| Lime | 3410 |
| Sandy Black Lime | 3420 |
| Sand (Water) | 3470 |
| Hard Close Sand | 3480 |
| Hard Sand | 3482 |
| Lime | 3513 |
| Shale | 3545 |
| Lime Shells | 3560 |
| Shale | 3610 |
| Lime | 3654 |
| Shale | 3690 |
| Sand | 3710 |
| Lime | 3718 |
| Shale | 3730 |
| Sandy Lime | 3766 |
| Sandy Shale | 3778 |
| Lime | 3788 |
| Sandy Lime | 3834 |
| Shale | 3882 |
| Sandy Shale | 3910 |
| Sand | 3918 |
| Shale | 4216 |
| Sand | 4230 |
| Shale | 4505 |
| Sand | 4515 |
| Shale | 4545 |
| Sand | 4554 |
| Sandy Shale | 4590 |
| Shale | 4595 |
| Sand—OIL SHOW | 4621 |
| Sandy Shale | 4761 |
| Sand—OIL SHOW | 4766 |
| Sandy Shale | 4860 |
| Shale | 4985 |
| Lime | 4993 |
| Shale | 5315 |
| Black Lime | 5490 |
| Lime Gray Hard | 5570 |
| Lime Gray | 5620 |
| Black Lime | 5660 |
| Hard Gray Lime | 5680 |
| Gray Lime | 5725 |
| Black Lime | 5760 |
| Lime | 5820 |
| Hard Lime | 5860 |
| Hard Gray Lime | 5900 |
| Lime | 5940 |
| Soft Gray Lime | 6000 |
| Lime | 6040 |
| Gray Lime | 6075 |
| Black Shale | 6130 |
| Gray Sandy Lime | 6140 |
| Black Lime | 6160 |
| Hard Black Lime and Shale | 6200 |
| Black Shale and Sandstone | 6250 |
| Gray Lime (TOP THIRD PAY) | 6284 |
| Sand and Oil Show and Gas | 6299 |
| Broken Shells and Black Shale | 6315 |
| Shale and Sandstone | 6320 |
| Shale | 6330 |
| Black Lime | 6340 |
| Shale | 6350 |
| Lime and Shale Shells | 6365 |
| Hard Gray Lime | 6400 |
| Lime | 6425 |
| Hard Gray Lime | 6441 |
| Lime | 6473 |
| Hard Lime | 6483 |
| Hard Sandy Lime | 6500 |
| Lime | 6528 |
| Lime and Shale | 6558 |
| Lime | 6576 |

Used Speedometer measurement at 6575'.

Measured up 6555'.

| | |
|---|---|
| Hard Black Lime | 6555-6710 |
| Black Lime and Shells | 6710-6760 |
| Lime | 6760-6770 |
| Black Shale | 6770-6785 |
| Black Lime | 6785-6800 |
| Black Shale | 6800-6815 |
| Hard Black Lime | 6815-6820 |
| Hard Lime and Shells | 6820-6825 |
| Black Shale | 6825-6840 |
| Black Lime and Hard Shells | 6840-6845 |
| Sandy Lime | 6845-6860 |
| Hard Black Lime | 6860-6925 |
| Medium Black Lime | 6925-6945 |
| Hard Black Lime | 6945-6965 |
| Medium Lime | 6965-6985 |
| Harder Black Lime | 6985-7140 |

2500' of oil in hole.

| | |
|---|---|
| Harder Black Lime | 7140-7170 |

Swabbed 2 ft. in gunbbl.

| | |
|---|---|
| Hard Black Lime | 7170-7210 |
| Black Shale | 7210-7220 |
| Hard Black Lime | 7220-7230 |
| Black Slate | 7230-7250 |
| Hard Black Lime | 7250-7345 |

Shale running in hole slows up drilling.

1-24-28—Swabbed 1'3".

| | |
|---|---|
| Hard Black Lime | 7345-7390 |

Repaired Sand Reel 18 Hours.

| | |
|---|---|
| Hard Black Lime | 7390-7495 |

Shut down from 1-27-28 to 1-30-28 Repairing sand reel, installing extra brake wheel and putting in new tug, posts, put tug on Bull wheels shaft and cemented shaft. Tow new ⅞" x 4500' Hazard Drilling Lines were put on 11-8-27 at 6160'. New ⅞" x 4500' Hazard drilling line put on at 7495' had cut off about 1200 feet of lines that were put on 11-28-27.

| | |
|---|---|
| Hard Black Lime | 7495-7535 |

Lost and fished out bailer at 7535' 2-10-28.

| | |
|---|---|
| Very Hard Black Lime | 7535-7545 |

Swabbed and spliced line.

| | |
|---|---|
| Hard Black Lime | 7545-7646 |
| Gray Hard Lime | 7646-7660 |
| Hard Sandy Black Lime | 7660-7670 |
| Hard Black Lime | 7670-7705 |

Spooled top cable and run on another 4500' x ⅞" Hazard, installed sand sheave pulleys and clutch on band wheel. (Down 18 hours).

| | |
|---|---|
| Hard Black Lime | 7705-7750 |

Swabbed. Down 18 hours re-babbitting brake wheel.

| | |
|---|---|
| Hard Black Lime | 7750-7760 |

Spliced cable, put on brake band crown and sand line pulleys.

| | |
|---|---|
| Hard Black Lime | 7760-7770 |

Run 2 splices in cable.

| | |
|---|---|
| Hard Black Lime | 7770-7780 |

Swabbed 6".

| | |
|---|---|
| Hard Black Lime | 7780-7850 |

Swabbed 6".

| | |
|---|---|
| Hard Black Lime | 7850-7955 |

Cable broke, lost tools in hole, went in with fishing string and lost them in hole. Fished from 3-21-28 to 3-28-28. Fished out both strings. This fishing job at 7955', 3-28-28. Run on new ¾" x 10,000 ft. black drilling line and new 1½" x 10,000' Black Sand Line. These lines installed 7955'. 3-31-28 Swabbed and cleaned out.

| | |
|---|---|
| Hard Black Lime | 7955-8062 |

4-11-28 Burned out motor and transferred one from Well No. 61.

| | |
|---|---|
| 4-12-28 Changed Motors and swabbed. | |
| Hard Black Lime | 8062-8160 |

Changed motor controlls.

| | |
|---|---|
| Hard Black Lime | 8160-8180 |

Swabbed 50 barrels.

| | |
|---|---|
| Black Slate | 8180-8225 |
| Black Lime | 8225-8230 |

Well burned at 1 a. m. Depth 8230'.

| | |
|---|---|
| Black Lime | 8230-8255 |

Fishing for bailer.

From May 1st to May 26th, cleaning up and re-building rig after fire.

From May 27th to May 31st, waiting on motors.

From May 31st to June 11th, rigged up.

From June 12th to July 16th, shut down, waiting on motors.

June 26th—Well flowed 117½ barrels.

July 16th to 17th, rigged up.

July 18th fishing for bailer.

July 19th fished out bailer and sand lines.

July 20th to July 27th shut down waiting on motors.

July 28th Installing motor and control. (Transferred from Texon University 1).

July 29th to August 9th, waiting on sand line.

August 3rd well flowed 92½ barrels.

May 12th to 28th put on new ¾"-6 x 19-10,000' R. L. Plow Steel Black Wire and Steel Company Drilling Line and new 1½" x 300'-6 x 7 Plow Steel Black Wire and Steel Co. Sand Line. This drilling line used to fish bailer and old sand line out of hole.

| | |
|---|---|
| 1st water sand | 375' |
| 2nd water sand | 765' |
| 3rd water sand | 840' |
| 4th water sand | 3470' |
| Top of Salt | 1110' |

1st oil show, 2464' to 2469'—Pay.

400,00 cu. ft. gas at 2461'.

Gas from 2900' to 2910'.

Top of Second Pay 3020'.

Oil Show at 4621'.

Oil Show at 4766'.

Top of third pay 6284'.

Oil Show and gas at 6299'.

#### Casing Record

| | |
|---|---|
| 15½" | 769' |
| 12½" | 1820' |
| 10" | 2450' |
| 8¼" | 2825' |
| 6⅝" | 3080' |
| 5 3/16" | 6184' |

First set at 4218'. Straight reamed to 6184' and set 5 3/16" 20' Seamless Casing.

Cemented with 98 sacks.

4-1-27 Knocked pin off bit and fished out at 4044'.

Well Burned 5-26-27 at 4 p. m Depth. 5315'. Rigged up from 5-26-27 to 6-13-27, started drilling 13th.

July 20th lost and fished out bailer at 6473 feet.

Shut down from 7-29-27 to 8-27-27 waiting for and installing electric motors. Motors installed at 6573'.

**Engine, Belt and Bull Rope Records on Texon Group I, University Well No. 1-B**

**ENGINE:**
Drilled with steam to 2466' and well put on pump.
25 H. P. Tico Gas Engine set at 2466'—Pumped well and drilled to 2570'.
Steam Engine Installed (10-7-26) and drilled from 2570' to 2690'.
25 H. P. Tico Installed (11-2-26) and drilled from 2590' to 3020'.
Clark Oil Engine Installed (11-19-26) at 3020'—Fishing for tools.
Steam Engine Installed at 3020'—(1-12-27) and drilled to 6573'.
Two 35-65 H. P. Motors installed (8-25-27) at 6573' and drilled to 8230' (Recent Depth).

**BELT:**
7-28-26 131'6" of 14"—6-ply Goodyear F. S. Belt.
8-28-27 119' of 14"—6-ply Rough Rider Belt.
7-16-28 Two 37'6"—12" 6-ply Wilcox Special Endless Belts.
7-19-28 41'8" of 12" 6-ply Rough Rider Belt.

**BULL ROPE:**
7-13-27 1—2½" x 90' Wall Bull Rope.
8-26-27 1—2½" x 90' Hoover and Allison Bull Rope.
11-6-27 1—2½" x 90' Wall Bull Rope.
11-6-27 1—2½" x 90' American Bull Rope.
2-9-20 2—2½" x 90' American Bull Ropes.
3-19-28 1—2½" x 90' Plymouth Bull Rope.
3-21-28 1—2½" x 90' Plymouth Bull Rope.
6-3-28 1—2½" x 90' Hoover and Allison Bull Rope.
7-16-28 1—2¾" x 95' Plymouth Bull Rope.
7-16-28 1—2½" x 90' Hoover and Allison Bull Rope.

---

**California "U" To Have Air Course**

LOS ANGELES, Sept. 5.—For the first time a course in commercial aviation will be offered in the college of commerce and business administration of the University of Southern California with the opening of the fall semester on Sept. 14.

This course will cover the history of aviation, types of air craft, types of motors, airports, airways, safety devices and other subjects in connection with aviation.

Earl W. Hill, head of the university's department of traffic and transportation, and educational director of Western Air Express, will be in charge of this new department.

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**Another Big Well at Long Beach**

(By Telegraph)

LOS ANGELES, Sept. 4.—Richfield Oil Co.'s Meader No. 1, two blocks west of the cemetery at Long Beach, came in Sept. 2 for 6600 barrels of clean oil, with bottom of the hole at 6731 feet. The well is producing from 700 feet of sand, cementing off upper sands. The new producer was holding up to initial flow nearly 48 hours later.

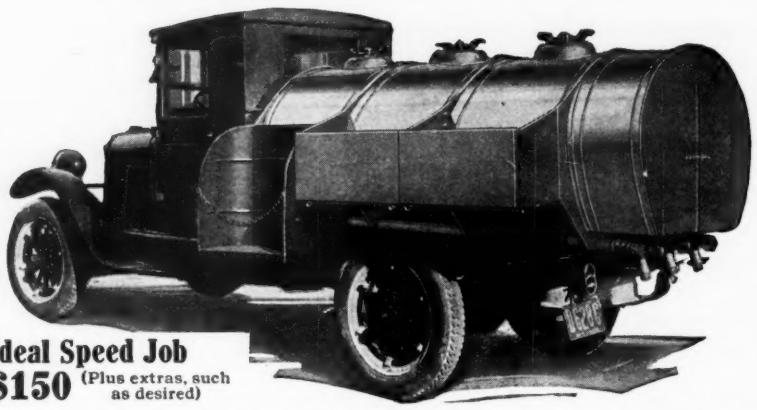
---

TULSA—A letter from Harry Botsford, secretary of the Society for the Development of Internal Combustion Engine Power, says that he is convalescing satisfactorily at his home in Titusville, Pa., after a series of surgical operations in Erie, Pa. He expects to be again devoting his energies to the society, which is composed of a number of manufacturers of gas and oil engines, within a few weeks.

---

W. T. Runcie, formerly sales manager, and H. C. Waugh, engineer of the American company, have joined the Paige-Jones company.


# Here It Is, *Sir!*



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**$150** (Plus extras, such as desired)

A Columbian Truck Tank for Ford, Chevrolet and other light trucks which offers the greatest service of any yet designed because it provides convertability for more different delivery conditions. The tank proper holds 375 gallons in three compartments, and is all welded, partition mounted and has the Columbian famous Three-point Support. With the tank, and included at the above price, are a pair of three-section can racks which bolt to partition brackets and hold six cans on either side. Individual sections of either can rack may be detached and replaced by the Columbian Barrel Carrier, shown in above illustration, or by Side Lube Tanks with faucet at rear. Barrel carriers, lube tanks and pipe line faucets are priced extra. **Send for Particulars and Specifications.**

**Columbian Steel Tank Company, Kansas City, Mo.**

**Complete Station Equipment**

COLUMBIAN
Partition Mounted-3 Point Supported
TRUCK TANK

**Latest Catalog Now Ready**

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## From All Fields

*Carloads, Tank Cars, and Cargoes.*
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GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
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WAX — PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

*For 35 years of reliability, service and integrity—*
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## JAMES B. BERRY SONS' CO., INC.
*General Office*—Oil City, Pa.

*District Offices at*
**New York, Philadelphia, Boston, Chicago**
**London — Hamburg**

*Cable Address—JASBER Oil City* *All Codes*

# Crude Oil Prices (in Effect Sept. 3)

*(Crude prices for years 1924-1925-1926-1927 in OIL PRICE HANDBOOK published annually)*

### GULF COASTAL

**Prices of The Texas Co.**

Effective March 14, 1927

| | |
|---|---|
| Grades A.....$1.20 | *Grades B.....$1.15 |
| ‡Grades B (light crude): | |
| 35-35.9.....$1.37 | 38-38.9.....$1.43 |
| 36-36.9..... 1.39 | 39-39.9..... 1.45 |
| 37-37.9..... 1.41 | 40 and above... 1.47 |

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

### ROCKY MOUNTAIN FIELDS

**Prices of Ohio Oil Co., and Midwest Refining Co.**

(Salt Creek prices effective July 26, 1928)

| | |
|---|---|
| ‡Salt Creek 29-29.9 | $0.95 |
| " " 30-30.9 | 1.02 |
| " " 31-31.9 | 1.09 |
| " " 32-32.9 | 1.16 |
| " " 33-33.9 | 1.21 |
| " " 34-34.9 | 1.26 |
| " " 35-35.9 | 1.31 |
| " " 36-36.9 | 1.36 |
| " " 37 and above | 1.41 |
| Elk Basin | 1.48 |
| Grass Creek light | 1.48 |
| Big Muddy | 1.33 |
| Lance Creek | 1.48 |
| Rock Creek | 1.33 |
| Mule Creek | 1.10 |
| Rex Lake | 1.10 |
| ‡Osage | 1.48 |
| ‡Cat Creek, Mont | 1.48 |
| Sunburst, Mont | 1.65 |
| ‡Hogback, N. Mex | 1.48 |
| Artesia, N. Mex | 1.08 |

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

### CALIFORNIA

**Standard Oil Co. of California**

**Santa Maria and Ventura Posted by Union Oil Co.**

| Gravity | Signal Hill Seal Beach Alamitos Heights Huntington Beach | Inglewood Torrance | Olinda-Brea Canon Richfield | Athens-Rosecrans Dominguez | Whittier La Habra | Coyote Hills | Santa Fe Springs | Newhall McKittrick Kern River | Midway Sunset Buena Vista & Elk Hills | Lost Hills | Coalinga | Wheeler Ridge | Montebello | Santa Maria | Ventura |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14-14.9 | $ .85 | $ .85 | $ .85 | .... | $ .85 | $ .85 | .... | $ .75 | $ .75 | $ .75 | $ .75 | $ .75 | $ .85 | $ .85 | $ .85 |
| 15-15.9 | .85 | .85 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .75 | .85 | .85 | .85 |
| 16-16.9 | .85 | .85 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .75 | .85 | .85 | .85 |
| 17-17.9 | .85 | .85 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .75 | .85 | .85 | .85 |
| 18-18.9 | .85 | .85 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .75 | .85 | .85 | .85 |
| 19-19.9 | .85 | .85 | .85 | .... | .85 | .85 | .... | .75 | .75 | .75 | .75 | .75 | .85 | .85 | .85 |
| 20-20.9 | .85 | .85 | .85 | .... | .85 | .85 | .... | .... | .77 | .77 | .77 | .77 | .86 | .85 | .85 |
| 21-21.9 | .89 | .89 | .89 | .... | .88 | .88 | .89 | .... | .79 | .79 | .79 | .79 | .89 | .86 | .86 |
| 22-22.9 | .93 | .93 | .93 | .... | .91 | .91 | .92 | .... | .82 | .82 | .82 | .82 | .92 | .87 | .87 |
| 23-23.9 | .97 | .97 | .97 | .... | .... | .94 | .95 | .... | .86 | .86 | .85 | .85 | .95 | .90 | .90 |
| 24-24.9 | 1.01 | 1.01 | 1.01 | 1.01 | .... | .97 | .98 | .... | .90 | .90 | .88 | .88 | .98 | .93 | .94 |
| 25-25.9 | 1.05 | 1.05 | 1.05 | 1.05 | .... | 1.00 | 1.01 | .... | .95 | .95 | .91 | .91 | 1.01 | .95 | .98 |
| 26-26.9 | 1.09 | 1.09 | 1.09 | 1.09 | .... | 1.04 | 1.04 | .... | 1.00 | 1.00 | .94 | .94 | 1.04 | .97 | 1.02 |
| 27-27.9 | 1.13 | 1.13 | 1.13 | 1.13 | .... | 1.08 | 1.07 | .... | 1.05 | 1.05 | .98 | .97 | 1.07 | .... | 1.06 |
| 28-28.9 | 1.17 | 1.17 | 1.17 | 1.17 | .... | 1.12 | 1.10 | .... | 1.10 | 1.10 | 1.02 | .... | 1.10 | .... | 1.10 |
| 29-29.9 | 1.21 | .... | 1.21 | 1.21 | .... | 1.16 | 1.15 | .... | 1.16 | 1.16 | 1.06 | .... | 1.13 | ..... | 1.14 |
| 30-30.9 | 1.25 | .... | 1.25 | 1.25 | .... | 1.20 | 1.20 | .... | 1.22 | 1.22 | 1.10 | .... | 1.16 | .... | 1.18 |
| 31-31.9 | 1.30 | .... | .... | 1.30 | .... | .... | 1.25 | .... | 1.28 | 1.28 | 1.14 | .... | .... | .... | 1.23 |
| 32-32.9 | 1.35 | .... | .... | 1.35 | .... | ..... | 1.30 | .... | 1.34 | 1.34 | 1.18 | .... | .... | .... | 1.28 |
| 33-33.9 | .... | .... | .... | 1.41 | .... | ..... | 1.35 | .... | 1.40 | 1.40 | 1.22 | .... | .... | .... | .... |
| 34-34.9 | .... | .... | ..... | 1.47 | .... | ..... | 1.40 | .... | .... | 1.46 | 1.26 | .... | .... | .... | .... |
| 35-35.9 | .... | .... | .... | 1.53 | .... | .... | 1.45 | .... | .... | .... | 1.30 | .... | .... | .... | .... |
| 36-36.9 | .... | .... | .... | 1.59 | .... | .... | 1.50 | .... | .... | .... | .... | .... | .... | .... | .... |
| 37-37.9 | .... | .... | .... | 1.65 | .... | .... | 1.55 | .... | .... | .... | .... | .... | .... | .... | .... |
| 38-38.9 | .... | .... | .... | 1.71 | .... | .... | 1.60 | .... | .... | .... | .... | .... | .... | .... | .... |
| 39-39.9 | .... | .... | .... | 1.77 | .... | .... | 1.65 | .... | .... | .... | .... | .... | .... | .... | .... |
| 40-40.9 | .... | .... | .... | 1.83 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 41-41.9 | .... | .... | .... | 1.89 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 42-42.9 | .... | .... | .... | 1.95 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |

*Union Oil Co. posts same prices in all above fields as Standard except in Montebello and Wheeler Ridge. It also posts Elwood Terrace at same prices as Rosecrans—Dominguez and also posts Santa Maria (Orcutt) and Ventura.

# REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

### Refiners' Supplies

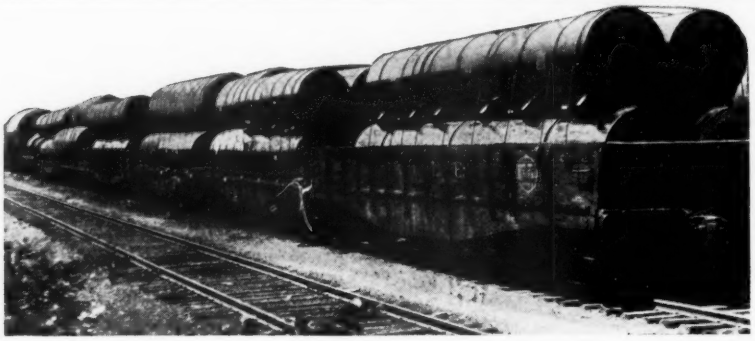
| | Sept. 4 | Aug. 27 |
|---|---|---|
| Soda Ash light 58% bags, cwt. | $1.32 | $1.32 |
| Silicate of Soda 60 deg. drums, cwt. | $1.65 | $1.65 |
| Silicate of Soda 40 deg. tank cars, cwt. | $0.60 | $0.60 |
| Silicate of Soda 40 deg. drums, cwt. | $0.70-0.75 | $0.70-0.75 |
| Sal Soda wks. | $0.90 | $0.90 |
| Caustic Soda 76% solid, cwt. | $2.90 | $2.90 |
| Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton | $11.00 | $11.00 |
| Oleum 20%, fuming sulfuric, tank cars, wks. | $18.50 | $18.50 |
| Sulfur, flowers of, cwt. | $3.10-4.00 | $3.10-4.00 |
| Liquid Chlorine, tank cars, wks., lb. | 3.50-5.00 | 3.50-5.00 |
| Litharge, powdered, casks, cwt. | 8.75 | 8.75 |

### Compounders' Supplies

| | Sept. 4 | Aug. 27 |
|---|---|---|
| **Vegetable Oils** | | |
| Linseed carloads, spot, lb. | 9.60 | 9.70 |
| Tanks, spot | 8.80 | 8.90 |
| Soya Bean, Tanks, coast, lb. | 9.50 | 9.50 |
| **Oleic Acid** | | |
| Distilled, tanks, lb. | 9.00 | 9.00 |
| Distilled, bbls., lb. | 9.75 | 9.75 |
| Saponified, tanks, lb. | 9.25 | 9.25 |
| Saponified, bbls., lb. | 10.00 | 10.00 |
| **Lard Oils** | | |
| Prime Winter Strained, lb. | 15.75 | 15.75 |
| Extra Winter Strained, lb. | 13.00 | 13.00 |
| Extra, lb. | 12.50 | 12.50 |
| Extra No. 1, lb. | 12.25 | 12.25 |
| No. 1, lb. | 11.50 | 11.50 |
| No. 2, lb. | 11.125 | 10.125 |
| Tallow oil, lb. | 11.375 | 11.375 |
| **Neatsfoot Oil** | | |
| Pure, bbls., lb. | 15.25 | 15.25 |
| Extra, bbls., lb. | 12.50 | 12.50 |
| No. 1 bbls., lb. | 11.75 | 11.75 |
| Cold Pressed, lb. | 18.50 | 18.50 |
| **Fish Oils** | | |
| Menhaden Oil | | |
| Light Pressed, gal. | 60 | 60-61 |
| Light Pressed, tank cars, N. Y., gal. | 54-56 | 54-56 |
| White bleached, gal. | 65-66 | 65-66 |
| Yellow bleached, gal. | 66-68 | 66-68 |
| Whale, extra winter bleached, gal. | 82 | 82 |
| **Naval Stores** | | |
| Steam distilled turpentine, N. Y., gal. | 52 | 52 |
| Steam distilled turpentine, Savannah, gal. | 47 | 47 |
| Gum turpentine, N. Y., gal. | 53.50 | 54.50 |
| Gum turpentine, f.o.b. cars Savannah, gal. | 46 | 47.75 |
| Wood Rosin F, N. Y., bbl. | $8.30 | $8.30 |
| Wood Rosin F, Savn'h., bbl. | $7.50 | $7.50 |
| Gum Rosin B, N. Y., bbl. | $9.15 | $8.90 |
| Gum Rosin B, f.o.b. cars Savannah, bbl. | $7.80 | $8.15 |
| Rosin oil, pure, gal. | 57 | 57 |
| Rosin oil, compounded, gal. | 47 | 47 |
| **Pine Tar** | | |
| Kiln burnt, bbl. | $12.50-14.00 | $12.50-14.00 |
| Retort, bbl. | $13.50-15.50 | $13.50-15.50 |
| **Alcohol** | | |
| Denatured, Formula 5, in bbls., per gal. | 54-61 | 53-60 |

*Nominal.

# P.D.M. Red Heads



# All Heads Dished

## For Better Gasoline Storage

PDM RED-HEAD tanks with dished heads are directly adapted to storing gasoline. The design and character of the tank fits it for all types of pressure and gravity dispensing systems.

PDM RED-HEAD tanks are welded or riveted and welded and are guaranteed leak proof at a test pressure of five pounds per square inch. PDM RED-HEAD tanks meet all the requirements of the Underwriters Laboratories and each tank is furnished with an Underwriters' label.

A full stock of PDM RED-HEAD tanks is carried at our Pittsburgh shop and tanks of the capacities most commonly used are in stock in many cities in the eastern states.

*Write for specification sheet No. 53.*

## Pittsburgh-Des Moines Steel Company

1055 Professional Bldg.
Pittsburgh, Pa.

659 Hudson Ter'l Bldg.
N. Y. City

Atlanta — Dallas — PDM STANDARD CLOSED TANKS FOR ALL PURPOSES — Des Moines — Chicago

# GULF Refining Company

*General Sales Offices*
PITTSBURGH, PA.

*District Sales Offices*
New York, Boston, Philadelphia, Louisville, Houston, New Orleans, Atlanta, Tampa

REFINERS OF OKLAHOMA, TEXAS AND LOUISIANA

# PETROLEUM

Refined Oil
Gasoline
Naphtha
Gas Oils
Paraffine Wax
Petroleum Coke

## FUEL OILS

## LUBRICATING OILS

Cylinder
Engine
Cordage

RED AND PALE PARAFFINE OILS

# Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

## Mid-Continent Refinery Operations Week Ended August 31 (By Telegraph)

| | Kansas | Oklahoma | North & Cent. Texas | North La.-Ark. | Total Week Ended Aug. 31 | Total Week Ended Aug. 3 |
|---|---|---|---|---|---|---|
| Plants Reporting | 12 | 29 | 29 | 12 | 82 | 81 |
| Crude Capacity | 92,000 | 160,200 | 130,100 | 54,900 | 437,200 | 431,700 |
| Cracking Capacity | 30,700 | 52,600 | 17,200 | 22,700 | 123,200 | 123,200 |
| Da. Av. Crude Runs | 73,398 — 5.2 | 118,824 — 20.1 | 100,533 + 1.9 | 57,988 + 2.7 | 350,743 — 10.6 | 338,827 |
| Da. Av. Other Oils | 9,005 + 17.8 | 3,730 — 6.2 | 5,457 — 1.2 | 1,182 + 48.1 | 19,374 + 8.0 | 20,959 |
| **GASOLINE—Gallons** | | | | | | |
| Stocks, Aug. 24 | 8,324,000 | 22,119,000 | 13,757,000 | 3,171,000 | 47,261,000 | 57,739,000 |
| Prod. 8-24 to 8-31 | 10,994,000 + 3.2 | 19,738,000 + 3.0 | 11,058,000 + 2.7 | 5,437,000 + 9.2 | 47,227,000 + 3.7 | 43,585,000 |
| Ship. 8-24 to 8-31 | 11,337,000 + 0.2 | 20,233,000 + 7.4 | 10,536,000 + 3.5 | 5,256,000 + 10.9 | 47,362,000 + 5.1 | 50,865,000 |
| Stocks, Aug. 31 | 7,871,000 — 4.2 | 21,624,000 — 2.2 | 14,279,000 + 3.8 | 3,352,000 + 5.7 | 47,126,000 — 0.3 | 50,459,000 |
| Ratio Sales to Prod. | 103.1% | 102.5% | 95.3% | 96.7% | 100.3% | 116.7% |
| **KEROSENE—Gallons** | | | | | | |
| Stocks, Aug. 24 | 8,274,000 | 2,971,000 | 1,311,000 | 407,000 | 12,963,000 | 14,234,000 |
| Prod. 8-24 to 8-31 | 2,508,000 — 5.7 | 2,817,000 + 3.6 | 1,526,000 + 0.6 | 580,000 + 87.7 | 7,431,000 + 3.1 | 6,236,000 |
| Ship. 8-24 to 8-31 | 2,672,000 — 16.6 | 2,645,000 + 2.0 | 1,812,000 + 12.4 | 598,000 +304.1 | 7,727,000 + 2.2 | 6,618,000 |
| Stocks, Aug. 31 | 8,110,000 — 2.0 | 3,143,000 + 5.8 | 1,025,000 — 21.8 | 389,000 — 4.4 | 12,667,000 — 2.3 | 13,852,000 |
| Ratio Sales to Prod. | 106.5% | 93.9% | 118.7% | 103.1% | 104.0% | 106.1% |
| **STOVE DISTILLATE—Gallons** | | | | | | |
| Stocks, Aug. 24 | 2,105,000 | 3,187,000 | 712,000 | 59,000 | 6,063,000 | 5,330,000 |
| Prod. 8-24 to 8-31 | 293,000 +225.6 | 501,000 + 71.6 | 267,000 + 34.8 | 123,000 + 30.9 | 1,184,000 + 75.9 | 765,000 |
| Ship. 8-24 to 8-31 | 284,000 +246.3 | 367,000 + 20.7 | 225,000 +1025.0 | 95,000 + 11.8 | 971,000 + 97.8 | 793,000 |
| Stocks, Aug. 31 | 2,114,000 + 0.4 | 3,321,000 + 4.2 | 754,000 + 9.5 | 87,000 + 47.5 | 6,276,000 + 3.5 | 5,302,000 |
| Ratio Sales to Prod. | 96.9% | 73.3% | 84.3% | 77.2% | 82.0% | 103.7% |
| **GAS OIL—Gallons** | | | | | | |
| Stocks, Aug. 24 | 6,492,000 | 38,298,000 | 3,960,000 | 6,221,000 | 54,971,000 | 55,121,000 |
| Prod. 8-24 to 8-31 | 1,763,000 — 5.9 | 3,376,000 + 58.1 | 1,935,000 + 27.1 | 1,456,000 — 11.2 | 8,530,000 + 19.0 | 10,774,000 |
| Ship. 8-24 to 8-31 | 1,594,000 — 19.9 | 2,915,000 — 26.3 | 1,748,000 + 10.1 | 1,784,000 — 11.1 | 8,041,000 — 15.7 | 10,168,000 |
| Stocks, Aug. 31 | 6,661,000 + 2.6 | 38,759,000 + 1.2 | 4,147,000 + 4.7 | 5,893,000 — 5.3 | 55,460,000 + 0.9 | 55,727,000 |
| Ratio Sales to Prod. | 90.4% | 86.3% | 90.3% | 122.5% | 94.3% | 94.4% |
| **FUEL OIL—Gallons** | | | | | | |
| Stocks, Aug. 24 | 21,106,000 | 58,746,000 | 68,709,000 | 18,780,000 | 167,341,000 | 153,035,000 |
| Prod. 8-24 to 8-31 | 8,067,000 — 2.5 | 7,002,000 — 23.3 | 14,312,000 — 3.4 | 8,654,000 + 5.3 | 38,035,000 — 5.9 | 37,538,000 |
| Ship. 8-24 to 8-31 | 7,580,000 — 15.6 | 6,806,000 — 12.9 | 12,520,000 + 7.6 | 8,824,000 + 12.8 | 35,730,000 — 1.4 | 35,144,000 |
| Stocks, Aug. 31 | 21,593,000 + 2.3 | 58,942,000 + 0.3 | 70,501,000 + 2.6 | 18,610,000 — 0.9 | 169,646,000 + 1.4 | 155,429,000 |
| Ratio Sales to Prod. | 94.0% | 97.2% | 87.5% | 102.0% | 93.9% | 93.6% |

## Gasoline Produced by Various Methods, Week Ended August 31

| | Kansas | % of Total | Oklahoma | % of Total | Texas | % of Total | Louisiana-Arkansas | % of Total | Total | % of Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Straight Run | 7,340,000 | 66.8 | 13,221,000 | 67.0 | 8,920,000 | 80.7 | 2,785,000 | 51.2 | 32,266,000 | 68.3 |
| Cracked | 3,003,000 | 27.3 | 5,509,000 | 27.9 | 1,777,000 | 16.1 | 2,190,000 | 40.3 | 12,479,000 | 26.4 |
| Natural | 651,000 | 5.9 | 1,008,000 | 5.1 | 361,000 | 3.2 | 462,000 | 8.5 | 2,482,000 | 5.3 |
| Total | 10,994,000 | | 19,738,000 | | 11,058,000 | | 5,437,000 | | 47,227,000 | |

**+ or — columns are % change from previous week.**

# Gasoline Shipments Turn Upward in Mid-Continent

Staff Special—By Telegraph
TULSA, Sept. 4

SHIPMENTS of gasoline from 82 Mid-Continent refineries increased more than 2,000,000 gallons during the last week in August. The total for the week was up to 47,126,000 gallons which is about in line with the average movement from reporting plants during the last two months. Every refining group in the district reported increases in gasoline business, the Oklahoma and Arkansas-Louisiana groups showing the largest comparative increases.

Stocks of gasoline were 47,126,000 gallons Aug. 31, almost the same figure which was reported on Aug. 24. Gasoline production for the week totaled 47,227,000 gallons, 135,000 gallons less than shipments. At the rate of shipments the last week gasoline stocks now represent only seven

## Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Aug. 31. Change in stocks figured from Aug. 3.

**GASOLINE**

| | Gallons |
|---|---|
| Production | 183,304,000 |
| Shipments | 186,637,000 |
| Net change in stocks | —3,333,000 |
| Ratio sales to production | 101.8% |

**KEROSENE**

| | Gallons |
|---|---|
| Production | 28,089,000 |
| Shipments | 29,274,000 |
| Net change in stocks | —1,185,000 |
| Ratio sales to production | 104.2% |

**STOVE DISTILLATE**

| | Gallons |
|---|---|
| Production | 3,408,000 |
| Shipments | 2,434,000 |
| Net change in stocks | +974,000 |
| Ratio sales to production | 71.4% |

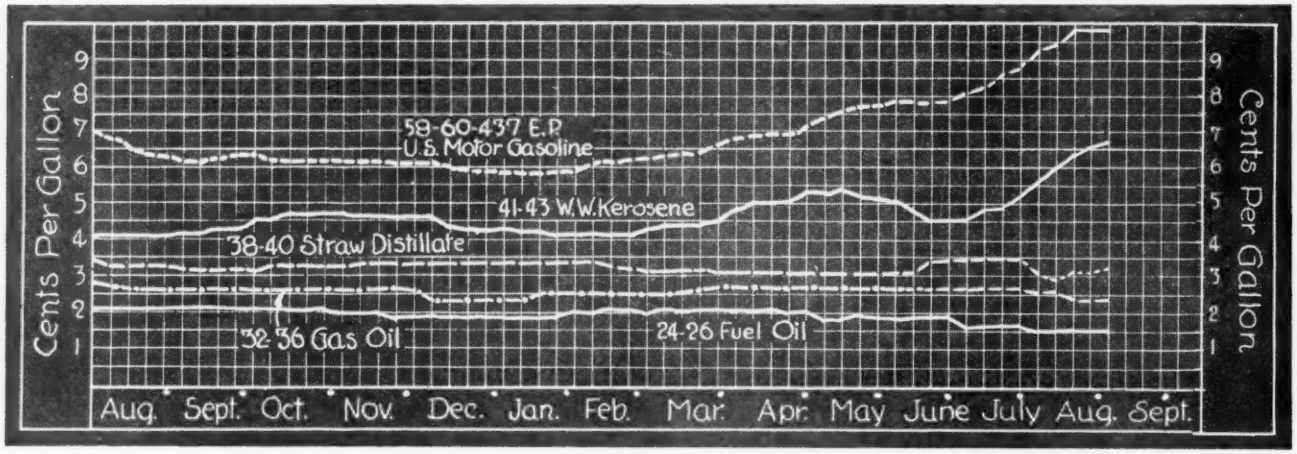
**GAS OIL**

| | Gallons |
|---|---|
| Production | 31,780,000 |
| Shipments | 32,047,000 |
| Net change in stocks | —267,000 |
| Ratio sales to production | 100.8% |

**FUEL OIL**

| | Gallons |
|---|---|
| Production | 153,939,000 |
| Shipments | 139,722,000 |
| Net change in stocks | +14,217,000 |
| Ratio sales to production | 90.8% |

## Current Prices of Principal Mid-Continent Refined Products




*Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue*

days' supply. A year ago gasoline stocks held by approximately the same group of plants totaled 64,376,000 gallons which represented about 10 days' supply at the rate of shipments then current.

In August little change was made in the level of gasoline stocks in the Mid-Continent. Aug. 3 the reporting group had reduced its stocks to 50,459,000 gallons as a result of the extraordinary July demand. With stocks at such a low level that most of the plants were without reserves which could be shipped it was apparent to refiners that during the remainder of the motoring season crude runs would have to be kept up to a level which would produce enough gasoline to meet the daily requirements of the jobbing trade and exporters. In the four weeks ended Aug. 31 gasoline stocks of reporting companies were reduced 3,333,000 gallons. In the preceding four weeks gasoline stocks had been lowered 20,756,000 gallons, almost one-third in 28 days although crude runs were at a new record figure of 336,000 barrels a day, a daily average of 50,000 barrels more than the average runs in July, 1927. In August runs were advanced to an average of 342,000 barrels a day.

Small reductions were made last week in gasoline stocks in Oklahoma and Kansas and minor increases were reported by the Texas and Louisiana-Arkansas groups.

Demand for kerosene has been excellent. Shipments the four weeks ended Aug. 31 totaled 29,274,000, enabling refiners to draw 1,185,000 gallons from storage. Suspicion has been aroused in some quarters that some unscrupulous dealers have been adulterating their gasoline with the lower grade oil in order to create an operating margin where one has not been available. In the week just closed kerosene shipments totaled 7,727,000 gallons and production 7,431,000 gallons, causing stocks to be reduced 296.000 gallons to 12,667,000 gallons.

Shipments of stove distillates almost doubled as jobbers began to prepare for fall demand. Production totaled 1,184,000 gallons as compared with 674,000 gallons the week before. Stocks at the end of the week stood at 6,276,000 gallons, an increase of 213,000 gallons over Aug. 24. A year ago distillate stocks stood at 7,890,000 gallons.

Production of fuel oil fell 2,400.000 gallons to 38,035,000 gallons but shipments fell 500,000 gallons to 35,730,000 gallons. Stocks were increased 2,300,000 gallons to 169,646,000 gallons. Gas oil stocks were virtually unchanged.

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CLEVELAND, Sept. 5.—Tank car gasoline price of Standard Oil Co. of Ohio on page 122 of this issue should be 13 cents delivered to points where freight rate is 1 cent or less a gallon from the Standard's Toledo and Cleveland refineries. Elsewhere price is 12 cents f.o.b. refinery. Taxes are to be added to both quotations.

### Weighted Average Prices Oklahoma Market

**On Feb. 6, 1928, National Petroleum News adopted the policy of publishing weighted average prices on the four more important gasolines in Oklahoma, instead of a range in prices. These weighted averages together with the number of cars of each grade sold, as of Tuesday, Sept. 4, are published below. The figures are not available for publication in the refinery market table on page 122 of this issue.**

| | Total Cars | Weighted Average |
|---|---|---|
| 58-60 U. S. Motor, 437 e. p. | 121 | 9.7458 |
| 60-62, 437 e. p. | 7 | 9.9464 |
| 60-62, 400 e. p. | 3 | 10.3333 |
| 64-66, 375 e. p. | 3 | 11.0000 |

**Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery in tank car lots.**

## Important Wells in Two South Texas Areas

**(By Telegraph)**

HOUSTON, Sept. 4.—Important completions have been made in two controlled areas of east and south Texas over the week end by the Humble Oil & Refining Co.

Its No. 3 Gutoskey test in the W. C. White league of Austin county, made 4000 barrels initial production at 3267 feet, and its No. 1 Bracey tested 500 barrels daily at 3335 feet. The Bracey well is a mile north of the Gutoskey. An older well on the Gutoskey, No. 2 still is making 1050 barrels net oil at similar depth.

On the Boggy Creek salt dome, which straddles the Anderson-Cherokee county boundary in east Texas, the Humble's No. 2 Lizzie Smith is making 100 barrels an hour, 27 per cent B.S., after deepening to 3867 feet. The No. 1 Peter Holloway, completed as the most southwestern well in the field, is making 72 barrels an hour at 3767 feet, flowing through three-quarters inch choke under 550 pounds reservoir pressure.

---

**Texas Gasoline Tax Reduced**

TULSA, Sept. 5.—The Texas gasoline tax, which was increased 1 cent, to 3 cents on March 15, 1927 as an emergency measure, was reduced 1 cent on Sept. 1, to 2 cents per gallon at the expiration of the emergency law.

The net tank wagon price of gasoline was unchanged in Texas, but the Magnolia Petroleum Co. reduced its gross tank wagon and service station prices 1 cent as a result of the tax reduction on Sept. 1.

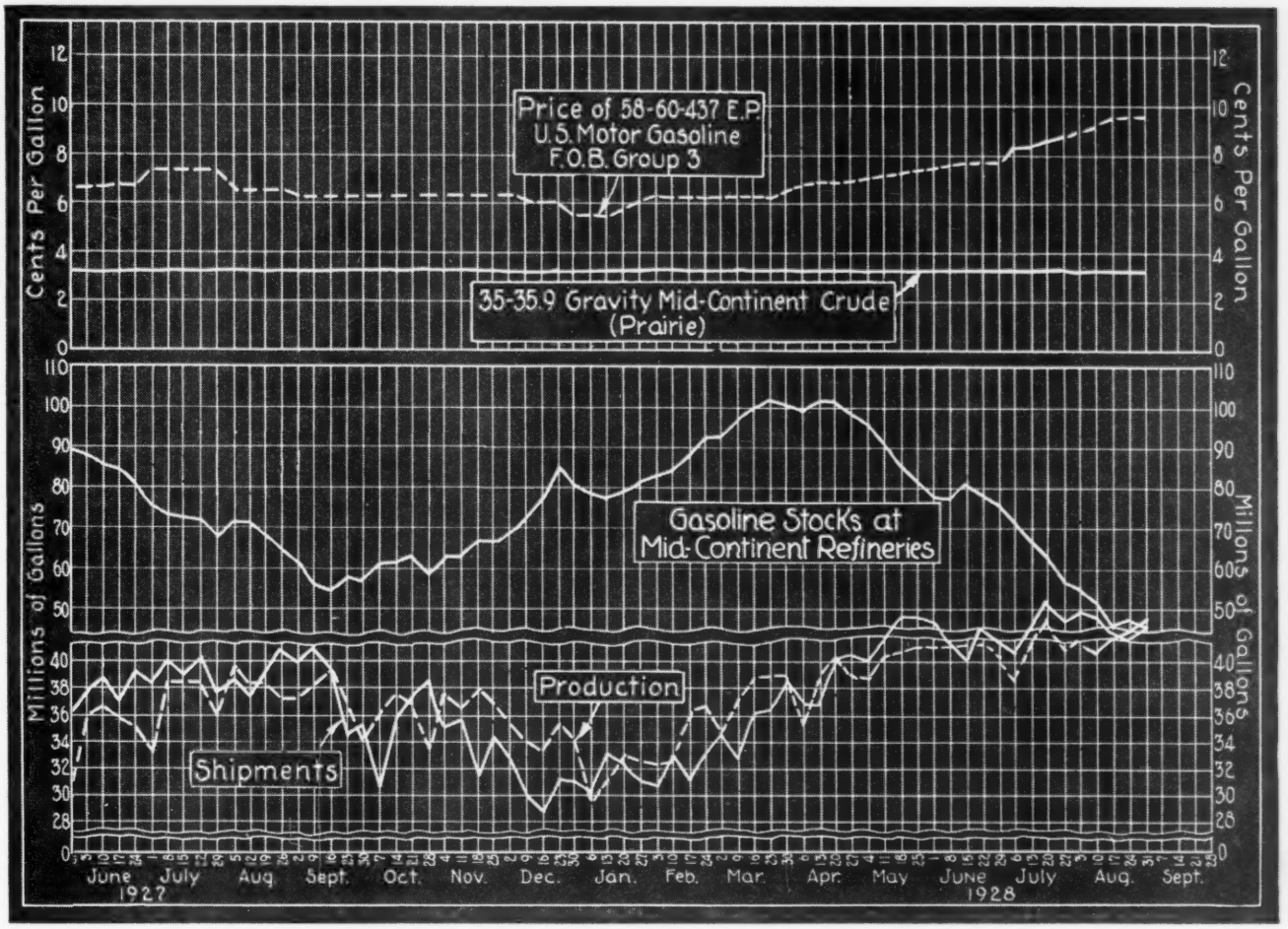
---

**Elkhart Oil Manager Sells Out**

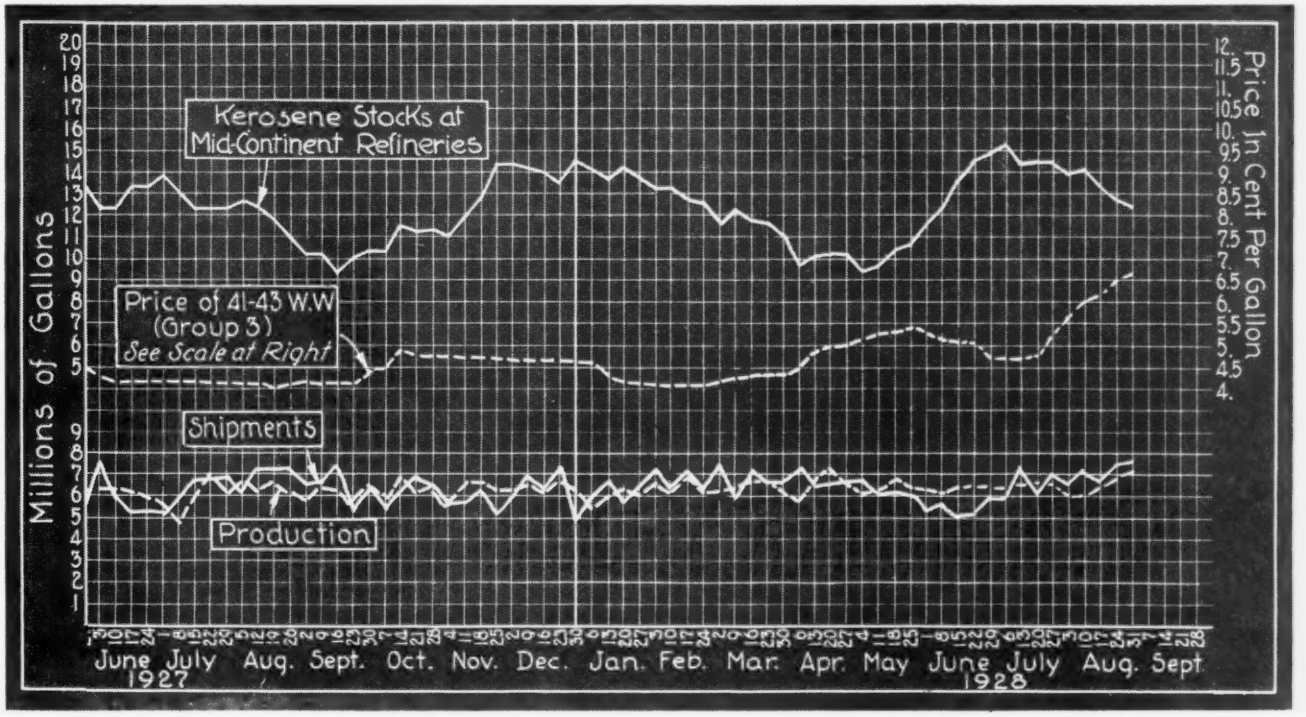
KANKAKEE, Ill., Sept. 5.—R. P. Bixler, who was formerly part owner and manager of the Elkhart Oil Co., Elkhart, Ind., has sold out his interest in that concern, and is now manager here for the Johnson Oil Refining Co., Chicago.

# Barometer of Mid-Continent Refinery Market—Week Ending August 31

*Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 82 Plants to National Petroleum News*

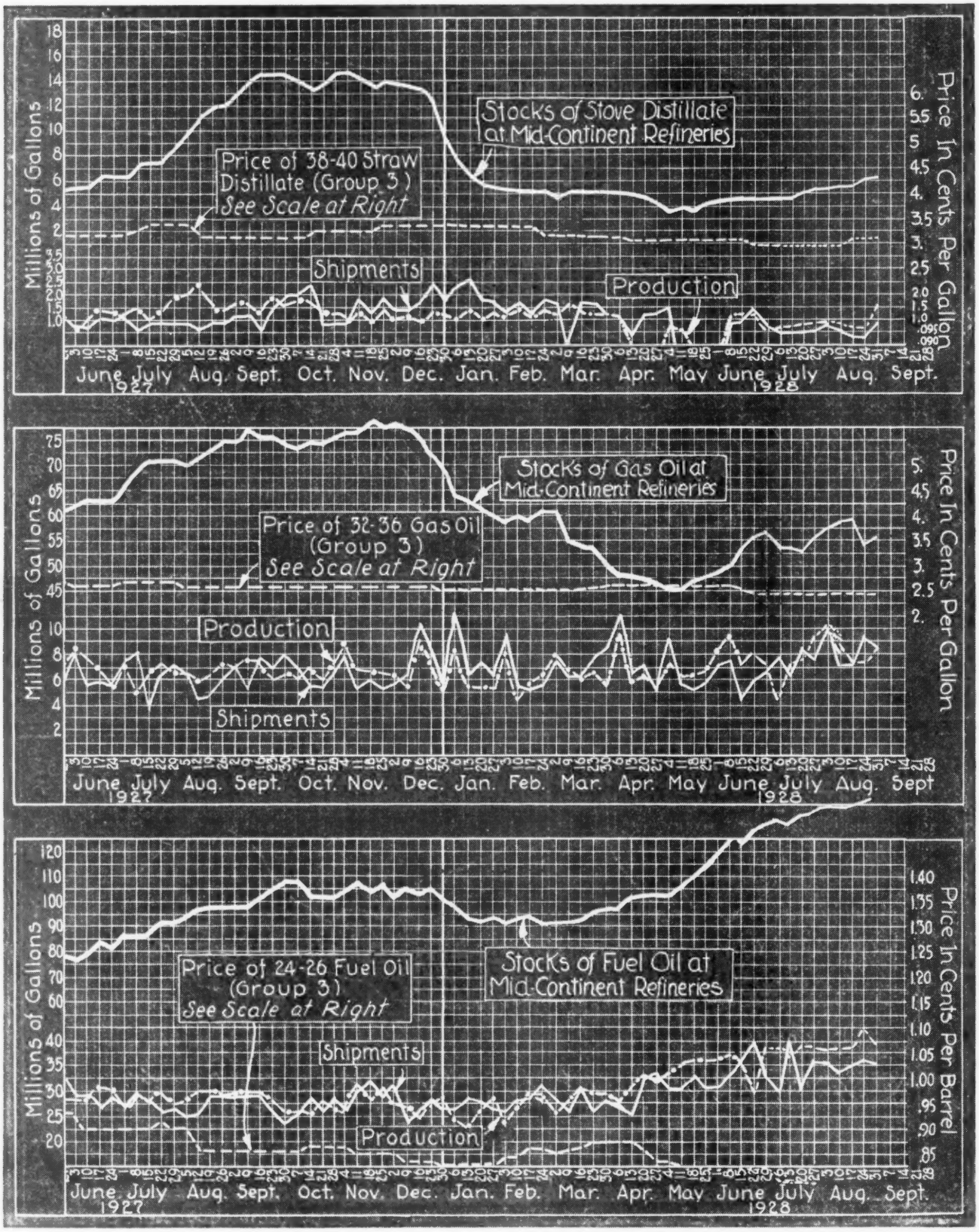

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at Mid-Continent Refineries
Production
Shipments
Millions of Gallons
June July Aug Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

*Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on the opposite page*


Kerosene Stocks at Mid-Continent Refineries
Price of 41-43 W.W (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cent Per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

# Barometer of Mid-Continent Refinery Market—Week Ending August 31

*Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 82 Plants to National Petroleum News*


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept
1927
1928
Millions of Gallons
Price In Cents Per Barrel
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Stocks of Fuel Oil at Mid-Continent Refineries
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

# Foreign Queries Bring Strength to Wax

NEW YORK, Sept. 1.—Active inquiry from abroad together with a continuance of limited offerings in this country stimulated advances of 0.25 to 0.375-cent in prices of virtually all grades of wax the past week. Several good sized sales of white crude scale and fully refined wax were reported at both New York and New Orleans. Prices for scale in the latter market held back at the usual differentials under New York, but fully refineds were traded in on an equal basis, so limited were the offerings according to several of the trade.

One of the large manufacturers of white crude scale on the eastern seaboard reported selling approximately 300 tons of goods early in the week at 5.10 cents a pound for delivery over September. The sales manager of the company said he had places for an additional 2,000 tons for which he could obtain as high as 5.25 cents. His company's production for September, however, is now sold up tight.

Sales of smaller lots of scale were reported later in the week at prices several points above this figure—5.10. United Kingdom buyers and domestic dealers were bidding 5.25 cents freely with sellers asking 5.375 cents as the week closed. A large broker was offering 5.25 cents firm for 200 tons of scale on Friday and said he was having no success in securing his requirements.

Fully refined wax, 125-127 A.m.p., sold at 5.625 cents both at New Orleans and New York early in the week. Sellers in both markets were asking 5.75 to 5.875 cents for this grade Friday and Saturday. A large sale of 133-135 A.m.p. fully refined was reported at 7 cents Tuesday with sellers asking 7.25 to 7.50 cents a pound toward the end of the week. An unconfirmed report had it that a small lot of this grade sold at 7.50 cents although there was a question in the minds of some sellers as to the verity of the report. Other high melting point grades also were quoted 0.25 to 0.5-cent higher than a week ago with offerings extremely light.

Yellow crude scale was scarce. The last paid prices for this grade is 4.875 cents although most sellers said they would have no trouble in getting their present asking prices—5 to 5.125 cents—if they had goods to offer.

---

CASPER, Wyo., Sept. 5.—The Midwest Refining Co.'s pipe line from La Barge to Opal, Wyo., is running about 4000 barrels of crude daily. The line is 38 miles long. The field has a potential daily production of 3500 barrels with about 165,000 barrels in storage.


**Rotary Lift**

**The Original Rotating Automobile Lift**

The continued preference of oil marketers for Rotary Lift is indicative of its value as a petroleum marketing asset.

*New models at new prices are now ready. Write or wire for full information.*

Automobile Rotary Lift Co.
Memphis, Tenn.



## "WHAT ABOUT THE OILGRAM?"

The executive of a gasoline company on the west coast recently inquired of a Tulsa executive, who replied in part. . . . .

> "If you were to wire me for Mid-Continent gasoline prices I would phone a member of the OILGRAM staff, and my reply to you would be the GIST OF WHAT HE TOLD ME. The OILGRAM staff is in direct and close contact with the markets almost every hour of the business day.
>
> *THEY KNOW THEIR BUSINESS"*

You, too, can have the benefit of this close contact with all phases of the market at all the principal refining and marketing centers. The service costs only $25 a quarter, or $75 a year, payable in advance. Approximately 30 cents a day—less than the cost of one wire or one phone call.

Why not avail yourself of this service—send your order with check to the nearest mailing point.

TULSA—904 World Bldg.
CHICAGO—35 East Wacker Drive
NEW YORK—342 Madison Avenue
CLEVELAND—1213 West Third St.

# Buyers Inclined to Hold Off September Purchasing

Staff Special
NEW YORK, Sept. 1

EASTERN gasoline markets marked time the past week. Spot demand from the jobbing trade showed some improvement, but advances long predicted for tank car prices near the month-end failed to materialize. The September market was fairly active but for the most part buyers were inclined to hold to the side lines and await post-holiday developments. The buoyant tone which has characterized the market since early spring subsided materially.

The enigma surrounding September gasoline was broken late this week when several of the major companies began offering goods over the first half of the month at current prices. There had been much speculation among the trade as to just what the basis would be for next month. A 0.25-cent or 0.5-cent advance had been expected pretty generally, among jobbers as well as sellers, but apparently no one company was willing to assume the leadership in raising prices. Easing off of prices in the Mid-Continent and at the Gulf was cited by several observers as an influencing factor in the trade's decision to hold at present levels.

Heavy consumption over the three-day holiday, it was hoped, would lift the market out of the rut it has gotten into temporarily. Jobbers' purchases are expected to be on a considerably larger scale next week after the general checkup on stocks.

Up to the end of this week, the volume of September buying reported was about 50 per cent of the usual covering on futures. At New York harbor goods was offered at 11.75 cents in tank cars. Resale agents reported making fair sized purchases on the basis of this price for the jobbing trade.

In the Philadelphia market a wide range continued to prevail for spot goods, but sellers were more in accord on futures. Spot U. S. Motor was available at as low as 11.50 cents, but the one company offering at this price refused to quote for September. Over the first half of next month, most companies were asking 11.75 to 12 cents.

New England prices for the most part were generally unchanged. Sellers in the Boston and Providence districts were offering U. S. Motor over the first half of September at 12.25 cents in tank cars f.o.b. refinery or seaboard terminal with a minimum of 13.50 cents delivered. In the Portland district goods was available on the same basis, although several companies were quoting 12.75 cents f.o.b. terminals with a minimum of 14 cents delivered.

Prices at southern seaboard points also were largely unchanged, although sellers at Savannah and Jacksonville said they were beginning to feel the effect of lower prices in north Texas. Most companies with terminals at these two points continued to ask 11.25 cents for U. S. Motor.

The market this week was not without an optimistic feature, however. Kerosene continued to get good play. Tank car prices for this commodity remained generally unchanged but goods were extremely scarce and few companies were in a position to be active in the open market.

Atlantic Refining Co. advanced the tank wagon price of kerosene 1 cent to 15 cents through Pennsylvania and Delaware on Aug. 29. This is the first change in whole prices for this commodity by Atlantic since early in May, 1927.

For water white in tank cars all sellers were asking 8.50 cents. The last company on the seaboard quoting 8 cents raised its price 0.5-cent early this week. Most of them who had anything to offer in the open market asserted they were having no trouble in booking orders at 8.50 cents.

Prices for the heavier burning oils were generally unchanged with gas oil held at 4.75 to 5 cents at New York harbor and light distillate at 6 cents. Several buyers said they were able to shade these prices on odd purchases, but the general run of business was transacted within the foregoing ranges. Posted price for Grade C bunker oil at New York harbor was unchanged at $1.05 f.o.b. terminals.

# Gulf Export Markets Have Week Of Quiet Trading

Staff Special
NEW YORK, Sept. 1

EXPORT markets at the Gulf experienced an unusually quiet week. Interest of foreign buyers lagged with the result that only one light oil transaction was reported closed.

While demand for kerosene and gas oil showed little if any improvement, prices for these oils were showing an advancing tendency. Gas oil, particularly, has fluctuated less than any other commodity in the Gulf market in the last six months, and talk of higher prices aroused interest among exporters this week.

Gas oil of 26-28 gravity has been listed at 3.875 to 4 cents with higher gravity goods at 4 cents flat by most refiners in this market, and it is doubtful if these prices have been shaded more than a tenth of a cent or so during the past six months, that is for goods with low sulfur content. With the domestic burning oil season close at hand, advances in this section of the market would not be surprising, according to the views of several market observers.

The single inquiry in the market this week, from a French buyer, was for approximately 34,000 barrels of U. S. Motor and 64-66, 375-end point gasoline and prime white kerosene. The inquiry was closed early this week with the gasolines selling at 10.25 cents and 12.25 cents, respectively, and the kerosene at 6.625 cents. By far the bulk of the cargo is to consist of the lighter gasoline.

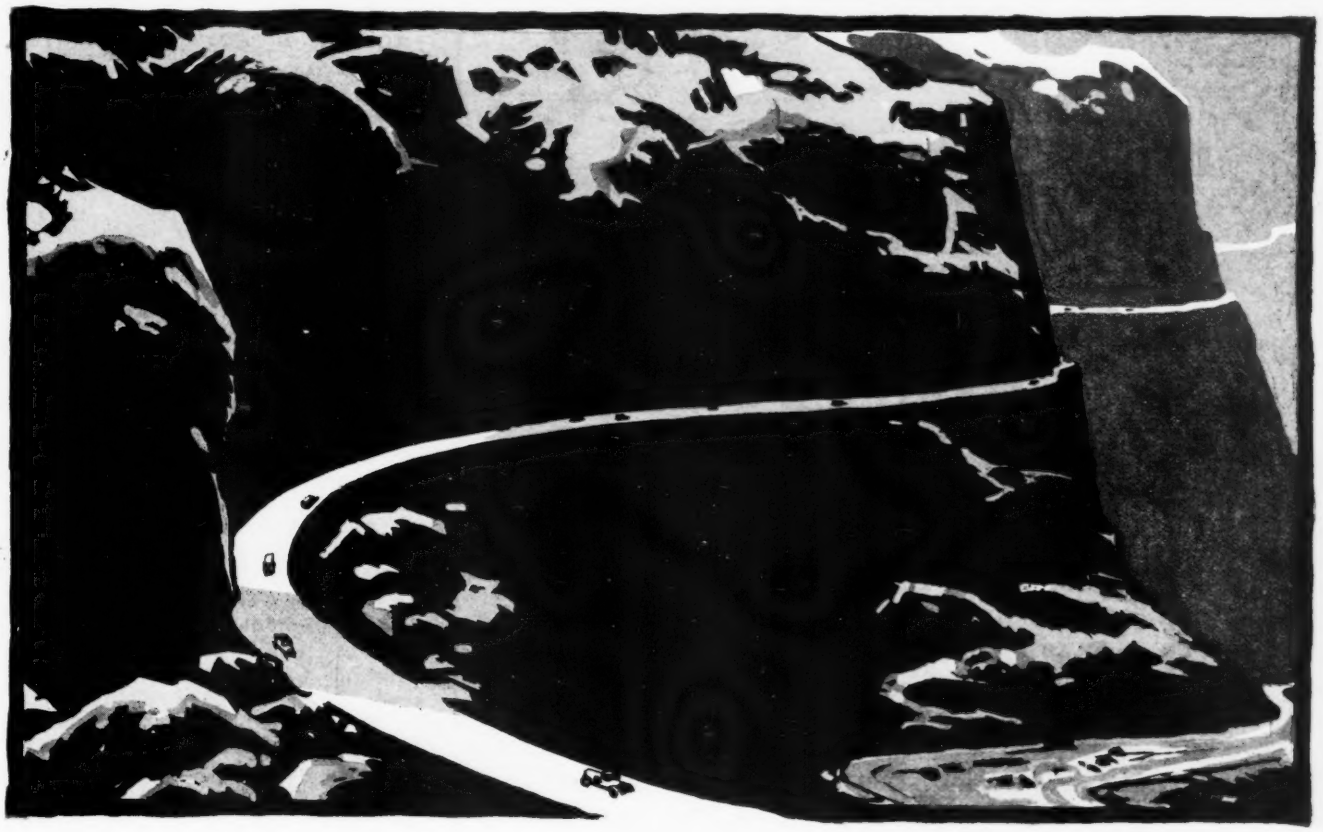
Absence of sizable inquiries for U. S. Motor gasoline made the market for this commodity somewhat uncertain. One or two suppliers continued to list 10.25 to 10.50 cents for this grade while others believed that as low as 10 cents could be done on firm bid, especially in view of the lower prices prevailing in the field. There was less difference of opinion about prices for high gravity gasoline. Most suppliers reported quoting 12.25 cents for 64-66, although one or two well informed buyers believed they might shade this price 0.125 or 0.25-cent on firm offer.

Inquiries for cased goods were routine. The 64-66, 375-end point gasoline in cases was quoted largely at $2.10.

Kerosene prices showed little change from those prevailing a week ago but continued scarcity of goods was reported, with water white practically unobtainable. Prime white kerosene was quoted mostly at 6.625 most of the week with some sellers advancing their prices 0.125-cent Friday. Water white was quoted nominally at 7.75 cents—the price governing the last business closed.

The fuel oil market was relatively quiet, although it was said several large foreign buyers were feeling out the market. A cargo of bunker C, minimum 14 gravity, sold at $0.63 a barrel early this week and two cargoes of minimum 16 gravity oil were later reported sold at $0.64. Most

# CONFIDENCE



AS the highway engineer has built roads that carry the motorist with speed and confidence up and over mountain-sides, and across great canons that were formerly obstructions to travel, so has this company built a great highway of confidence between Jobber and consumer.

Quality products identified by the Marland Red Triangle form the basis of this "highway" that leads to an ever increasing, profitable business for those Jobbers and Dealers doing business under the Marland banner.

More than 700 successful Marland Jobbers are traveling this highway to success and testify to the advantages they have in the sale of Marland trade-marked products.

There are many splendid opportunities for other aggressive Jobbers and Dealers to cover territories not now served by Marland. Write your nearest sales office for all the details.

MARLAND OILS

## MARLAND REFINING COMPANY

*General Offices & Refinery*—Ponca City, Okla.

*Branch Offices:* 11 Broadway, New York; 208 S. LaSalle St., Chicago; Finance Building, Kansas City; University & Pryor, Minnesota Transfer, Minn.; Bank of Commerce Bldg., Tulsa, Okla.

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**Refineries: Reno, Pa., and Tidioute, Pa.**

# PENN-EMPIRE

## OILS and GREASES

*When you buy Penn-Empire you get the best*


suppliers were asking from $0.65 to $0.70 a barrel as the week closed.

Bunkering prices were generally unchanged with New Orleans quoted at $0.80 to $0.85 and points further west in the Gulf from 5 to 10 cents a barrel higher.

## Jacklin Describes Device For Testing Gasoline

CLEVELAND, Sept. 4.—H. M. Jacklin, professor of automotive engineering at Purdue university, Lafayette, Ind., and formerly holding that position at Ohio State university, has put out a booklet describing the Jacklin indicator, a machine for testing the qualities of motor fuels.

According to the booklet, the development of the Jacklin indicator was started on the premise that the device should make use of the simple, low-speed indicator in recording the diagram. By this means, a well known and reliable instrument whose results are immediately available could be presented for use. The booklet says:

"Some years ago the development of the Jacklin high-speed indicator was started. After many trials the instrument was described and demonstrated at the summer meeting of the Society of Automotive Engineers in June, 1926. Demonstrations were made on an automobile moving at speeds up to 25 miles an hour. The instrument makes use of the reliable rugged low speed indicator in such a way that the inertia effects are eliminated except in extreme cases. Since the whole device has been used on moving vehicles on good, bad and indifferent highways, its ruggedness has been well demonstrated.

## Tanker Rates

NEW YORK, Sept. 4.—Approximate tanker freight rates in the following trades are, to Continental ports, in shillings per ton of 2240 pounds, British Sterling; to American ports, cents per barrels:

| | Crude &/or Fuel | Refined Oil |
|---|---|---|
| Calif. to U.K. or Continental ports* | 25/6 | 26/- |
| Gulf to U.K. or Continental ports* | 15/ | 15/6 |
| North Atlantic to U.K. or Continental ports* | 12/ | 12/6 |
| Calif. to North Atlantic ports (not E. of N. Y.) | 50c | 68-70c |
| **Gulf and North Atlantic ports (not E. of N.Y.) | 16-17c | 25-27c |

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

# Complete Seaboard Market

*(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)*

## Eastern Domestic Market

**(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations and sales.)**

| | Sept. 4 | Aug. 27 | Aug. 20 |
|---|---|---|---|
| U.S. Motor gasoline, New York harbor | 11.75 | 11.75 | 11.75 |
| U.S. Motor gasoline, Philadelphia | 11.50 –12.00 | 11.50 –12.00 | 11.50 –12.00 |
| U.S. Motor gasoline, Portland | †12.25 –12.75 | †12.75 | ..... |
| U.S. Motor gasoline, Boston district | *12.25 | *12.25 | *12.25 |
| U.S. Motor gasoline, Providence district | *12.25 | *12.25 | *12.25 |
| U.S. Motor gasoline, Baltimore | 11.75 | 11.75 | 11.75 |
| U.S. Motor gasoline, Norfolk | 11.75 | 11.75 | 11.75 |
| U.S. Motor gasoline, Charleston | 11.50 | 11.50 | 11.50 |
| U.S. Motor gasoline, Savannah | 11.25 | 11.25 | 11.25 |
| U.S. Motor gasoline, Jacksonville | 11.25 | 11.25 | 11.25 |
| California U.S. Motor gasoline, New York Harbor | 12.00 | 12.00 | 12.00 |
| California U.S. Motor gasoline, Baltimore | 11.75 | 11.75 | 11.75 |
| California U.S. Motor gasoline, Philadelphia | 11.50 –11.75 | 11.50 –11.75 | 11.50 –11.75 |
| Water white kerosene, New York Harbor | 8.50 | 8.50 | 7.75 – 8.00 |
| Water white kerosene, Philadelphia | 8.50 | 8.50 | 7.75 – 8.00 |
| Water white kerosene, Baltimore | 8.50 | 8.00 – 8.50 | 7.75 – 8.00 |
| 28-34 gas oil, New York harbor | 4.75 – 5.00 | 4.75 – 5.00 | 4.75 – 5.00 |
| 28-34 gas oil, Boston district | 4.75 – 5.00 | 4.75 – 5.00 | 4.75 |
| 36-40 furnace oil, New York harbor | 6.00 | 6.00 | 6.00 |
| 36-40 furnace oil, Boston district | 6.00 – 6.25 | 6.00 – 6.25 | 6.00 – 6.25 |
| Grade C bunker oil, New York harbor | $1.05 | $1.05 | $1.05 |
| Grade C bunker oil, Boston district | $1.05 | $1.05 –$1.10 | $1.05 –$1.10 |
| Diesel oil, New York harbor | $2.00 | $2.00 | $2.00 |

Note: Above prices do not include inspection tax levied in some states.
*Minimum of 13.50c delivered.
†Minimum of 13.50 to 14c delivered

**MEDICINAL OILS**

| | | | |
|---|---|---|---|
| Russian 885-890 s.g. 325-330 vis | $0.80 – 0.90 | $0.80 – 0.90 | $0.80 – 0.90 |
| Russian 870-875 s.g., 150-155 vis | $0.67 – 0.77 | $0.67 – 0.77 | $0.67 – 0.77 |
| Russian 860-865 s.g., 80-85 vis | $0.65 – 0.75 | $0.65 – 0.75 | $0.65 – 0.75 |

## New York Export Market

**(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)**

| | Sept 4. | Aug. 27 | Aug. 20 |
|---|---|---|---|
| U. S. Motor gasoline | 26.90 | 26.90 | 26.90 |
| 43-45 150 w.w. kerosene | 18.65 | 18.65 | 18.65 |
| 42-44 110 s.w. kerosene | 17.40 | 17.40 | 17.40 |
| **CYLINDER OILS** | | | |
| Bright stock, dark | 42.00 –43.00 | 41.00 –42.00 | 40.00 –42.00 |
| 600 D filtered | 31.00 –32.00 | 30.00 –32.00 | 30.00 –32.00 |
| 600 Warren E filtered | 26.00 –27.00 | 26.00 | 25.50 |
| 600 s.r. unfiltered | 21.00 | 20.00 –21.00 | 20.00 –21.00 |
| 650 s.r. unfiltered | 22.50 –23.00 | 22.50 –23.00 | 22.50 –23.00 |
| 600 flash, s.r. | 26.00 | 25.00 –26.00 | 25.00 –26.00 |
| 630 flash, s.r. | 34.00 –36.00 | 34.00 –36.00 | 34.00 –36.00 |
| **RED ENGINE OILS (Vis. 100°)** | | | |
| 300 vis. No. 6½ color | 19.50 | 19.50 | 19.50 |
| 250 vis. No. 6 color | 18.50 | 18.50 | 18.50 |
| 200 vis. No. 6 color | 18.00 | 18.00 | 18.00 |
| **PALE ENGINE OILS (Vis. 100°)** | | | |
| 230 vis. No. 3¾ color | 23.50 | 23.50 | 23.50 |
| 180 vis. No. 3¼ color | 19.50 | 19.50 | 19.50 |
| 100 vis. No. 2¼ color | 15.50 | 15.50 | 15.50 |
| **MOTOR OILS (Vis. 100°)** | | | |
| 600 vis. No. 7 color | 34.50 | 34.50 | 34.50 |
| 500 vis. No. 6½ color | 32.50 | 32.50 | 32.50 |
| 400 vis. No. 7¼ color | 30.50 | 30.50 | 30.50 |
| 300 vis. No. 6 color | 29.50 | 29.50 | 29.50 |
| 200 vis. No. 3¼ color | 20.00 | 20.00 | 20.00 |
| **MEDICINAL OILS** | | | |
| 875-885 s.g. | $0.80 | $0.80 | $0.80 |
| 865-870 s.g. | $0.70 | $0.70 | $0.70 |

**WAXES (In cents per pound, f.a.s. carload lots)**
**WHITE CRUDE SCALE (In barrels)**

| | Sept. 4 | Aug. 27 | Aug. 20 |
|---|---|---|---|
| 122-124 A.m.p. | 5.25 – 5.375 | 5.00 | 4.75 – 5.00 |
| 124-126 A.m.p. | 5.25 – 5.375 | 5.00 | 4.75 – 5.00 |
| **FULLY REFINED (In burlap bags)** | | | |
| 123-125 A.m.p. Phila. | 5.625– 5.75 | 5.375– 5.50 | 5.375– 5.50 |
| 125-127 A.m.p. | 5.75 – 5.875 | 5.50 – 5.625 | 5.50 – 5.625 |
| 128-130 A.m.p. | 6.00 – 6.25 | 5.625– 5.75 | 5.625– 5.75 |
| 130-132 A.m.p. | 6.25 – 6.50 | 6.00 | 6.00 |
| 133-135 A.m.p. | 7.25 | 7.00 | 6.875– 7.00 |
| 135-137 A.m.p. | 7.50 | 7.25 – 7.375 | 7.25 |
| **YELLOW CRUDE SCALE** | | | |
| 124-126 A.m.p. | 5.00 – 5.125 | 4.875–5.00 | 4.50 – 4.625 |

***Prices nominal.**

## Gulf Export Market

**(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary)**

| **GASOLINE** | Sept. 4 | Aug. 27 | Aug. 20 |
|---|---|---|---|
| U. S. Motor | 10.00 –10.25 | *10.25 | 10.00 –10.25 |
| 60-62, 400 e.p. | 10.75 –11.00 | 11.00 | 11.00 |
| 61-63, 390 e.p. | 11.50 | 11.50 –11.75 | 11.50 –11.75 |
| 64-66, 375 e.p. | 12.00 –12.25 | *12.25 | 12.00 –12.25 |
| U. S. Motor, cases (cargoes) | $1.95 | $1.95 | $1.95 |
| 64-66, cases (cargoes) | $2.10 | $2.10 | $2.10 |

***Sales only.**

| **KEROSENE** | | | |
|---|---|---|---|
| 44 water white | 7.75 | 7.75 | 7.50 |
| 41-43 prime white | 6.75 | *6.625 | 6.375– 6.50 |
| Water white, cases (cargoes) | $1.65 | $1.65 | $1.65 |
| Prime white, cases (cargoes) | $1.55 | $1.55 | $1.55 |

***Sales only.**

| **DOMESTIC GAS & BUNKER OILS** | | | |
|---|---|---|---|
| *26-30 translucent gas oil | 3.875– 4.00 | 3.875– 4.00 | 3.875– 4.00 |
| *30-32 translucent gas oil | 4.00 | 4.00 | 4.00 |
| Grade C bunker oil | $0.80 –$0.90 | $0.80 –$0.90 | $0.80 –$0.90 |
| Grade C bunker oil, cargoes | $0.65 –$0.70 | $0.65 –$0.70 | $0.65 –$0.70 |

***Less than ½ of 1% sulfur.**

| **MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)** | | | |
|---|---|---|---|
| Heavy Panuco crude taxes to be paid | $1.00 –$1.02 | $1.00 –$1.02 | $1.00 –$1.02 |
| Grade C bunker oil, for bunkering purposes, taxes paid | $1.10 | $1.10 | $1.10 |

**SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F.: cold test 0) (Tanker, f.o.b. Houston)**

| | | | |
|---|---|---|---|
| 100 vis. No. 2 unfiltered pale | 5.75 | 5.75 | 5.75 |
| 200 vis. No. 3 unfiltered pale | 8.50 – 9.00 | 8.50 – 9.00 | 8.50 – 9.00 |
| 300 vis. No. 3 unfiltered pale | 9.50 – 9.875 | 9.50 – 9.875 | 9.50 – 9.875 |
| 500 vis. No. 3½ unfiltered pale | 10.75 –11.50 | 10.75 –11.50 | 11.00 –12.00 |
| 750 vis. No. 4 unfiltered pale | 12.50 –13.00 | 12.50 –13.00 | 12.50 –13.00 |
| 1200 vis. No. 5 unfiltered pale | 15.50 –16.00 | 15.50 –16.00 | 15.50 –16.00 |
| 200 vis. No. 5-6 red oil | 7.00 – 8.00 | 7.00 – 8.00 | 7.00 – 8.00 |
| 300 vis. No. 5-6 red oil | 8.00 – 9.00 | 8.00 – 9.00 | 8.00 – 9.00 |
| 500 vis. No. 5-6 red oil | 9.75 –10.50 | 9.75 –10.50 | 10.00 –10.50 |
| 750 vis. No. 5-6 red oil | 11.25 –11.50 | 11.25 –11.50 | 11.25 –11.50 |
| 1200 vis. No. 5-6 red oil | 14.50 –16.50 | 14.50 –16.50 | 14.50 –16.50 |

## Pacific Export Market

**(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)**

| | Sept. 4 | Aug. 27 | Aug. 20 |
|---|---|---|---|
| Gasoline, U. S. Motor, 53-55 Gravity | 8.50 – 9.00 | 8.50 – 9.00 | 8.50 – 9.00 |
| Gasoline, U. S. Motor, blends and special cuts | 9.00 – 9.50 | 9.00 – 9.50 | 9.00 – 9.50 |
| Gas Oil, 30-34, per barrel | $1.10 –$1.20 | $1.10 –$1.20 | $1.10 –$1.20 |
| Diesel Oil, 27 plus, per barrel | $0.95 –$1.10 | $0.95 –$1.10 | $0.95 –$1.10 |
| Bunker oil, 14-18, per barrel | $0.80 –$1.00 | $0.80 –$1.00 | $0.80 –$1.00 |
| Fuel oil, 14-18 per barrel | $0.70 –$1.00 | $0.70 –$1.00 | $0.70 –$1.00 |
| Kerosene, 38-40 w.w., 125-150 flash, per gal. | 5.50 – 6.00 | 5.50 – 6.00 | 4.50 – 5.00 |
| **Cased Goods** | | | |
| Gasoline, U. S. Motor | $1.75 –$1.85 | $1.75 –$1.85 | $1.75 –$1.85 |
| Kerosene, 38-40 w.w., 125-150 flash | $1.50 –$1.60 | $1.50 –$1.60 | $1.45 –$1.50 |

# Better Retail Price Conditions Stiffen California Market

Staff Special

LOS ANGELES, Sept. 1

THE petroleum products market in California was unchanged in practically every respect the past week except that gasoline in tank cars for movement within the state was tighter with slightly increased quotations while spot natural gasoline continues scarce with prices slightly higher.

In the export market, U. S. Motor was still available at 8.50 to 8.75 cents, with some of the companies refusing to consider orders at less than 9 cents. It was reported that one cargo was sold at 8.50 cents. Refiners are asking a quarter to one-half cent higher for 390 to 400-end point while 375-end point is held at about 2 cents higher than U. S. Motor. Tanker rates are pegged this week at around 70 cents for east coast movement, clean bottoms.

Fuel oil market continues low with plenty on hand. It is understood that the export price holds around 70 cents. The larger companies, however, appear to feel that the market will improve this fall and winter and are not reducing their prices to move this product.

The local gasoline service station cut price situation is fast clearing.

The fact that this situation is clearing up has added strength to the tank car market, with gasoline moving to competitive points outside of the state at 9 to 9.50 cents, while the low for movement within state is 10.50 cents without tax. It is indicated that out of state shipments will show some improvement shortly, as the general state market is reflected.

The kerosene market is also rather healthy, mostly on account of the scarcity of the product. Only a few refiners care for tank car orders and they have boosted their price at least half a cent recently, while export business is also slightly stronger, with little moving.

# Gasoline Stocks in July Lowest Since October

WASHINGTON, Sept. 1.—The high mark so far this year in production of both crude and gasoline and a 4,000,000-barrel decrease in gasoline stocks, the largest decline this year, were outstanding features of oil industry operations during July, according to the U. S. Bureau of Mines.

Production of crude in July totaled 75,426,000 barrels, a gain of 208,000 barrels over May, the previous high month, and a gain of 2,900,000 barrels over June. This is the highest amount of crude produced since October, 1927. July production was at the rate of 2,433,000 barrels daily, an increase of 16,000 barrels over June daily average, and an increase of 6613 barrels over May daily average.

The gain in crude output was accompanied by a 1,061,000 barrel decrease in crude stocks, which stood at 483,121,000 barrels on July 31. Those stocks, however, were over 20,000,000 barrels more than stocks at the end of 1927. Crude stocks east of California fell off 1,508,000 barrels during July, to 369,243,000 barrels, but increased 447,000 barrels in California, to 113,878,000 barrels.

Gasoline production in July totaled 32,884,000 barrels, an increase of 2,209,000 barrels over June. Output was at the rate of 1,060,000 barrels daily, compared with June daily average output of 1,022,500 barrels, and May daily average of 994,354 barrels.

Gasoline stocks decreased a little over 4,000,000 barrels in July, standing at 30,392,000 barrels on July 31, compared with 34,393,000 barrels on June 30. This is the lowest figure for gasoline stocks reached within the past three and one-half years with the exception of stocks in October and September, 1927.

Kerosene production and stocks increased slightly in July. Output was 4,994,000 barrels, a gain of 145,000 barrels over June output, and stocks totaled 8,470,000 barrels on July 31, a gain of 100,000 barrels over June 30 stocks.

Gas and fuel oil production and stocks also increased in July. Output gained 1,376,000 barrels, to 36,941,000 barrels, and stocks gained 2,824,000 barrels, to 113,073,000 barrels on July 31.

Lubricants' output was 2,827,000 barrels, a decrease of 182,000 barrels from June output, and stocks were 7,667,000 barrels in July, a decrease of 165,000 barrels from June stocks.

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### Seasonal Demand for Lubes

HOUSTON, Sept. 4.—Gulf Coastal lubricant prices were unchanged over the past week. Jobber demand is normal for the season and follows larger shipments than usual for the first half of August. Manufacturers are looking forward to increased business in October against winter requirements for zero cold test oils.

## Penna. Kerosene Prices Advance Sharply

CLEVELAND, Sept. 1.—Kerosene quotations advanced sharply with the beginning of September in western Pennsylvania refinery market. Quotations on other commodities generally were unchanged during the final week of August—U. S. Motor at 12.25 cents, light bright stock at 36.50 to 37 cents, wax at 5 to 5.25 cents.

The 45 w.w. kerosene range Sept. 1 was 7.25 to 8 cents, representing 0.50 to 0.75 cent advances by some refiners. The 46 w.w. was quoted at 7.75 to 9 cents, and 48 w.w. at 9 cents. Several refiners reported being behind on shipments, and through the territory goods were reported scarce.

U. S. Motor gasoline entered September at 12 to 12.50 cents, with majority of sellers asking 12.25 cents. Higher gravity gasoline quotations were advanced further.

Bright stock quotations late in August were up to 36.50 to 37 cents for light and 34.50 to 35 cents for dark. Wax was unchanged.

Steam refined and filtered stocks were unchanged, as were viscous neutrals. Fuel oil prices were lower fractionally.

Buying on the whole was brisk except for fuel oil and viscous neutrals. One refiner reported August was best month in the history of his plant.

## Hughes Resigns Michigan Secretaryship

JACKSON, MICH., Sept. 4.—Walter A. Garvey, who has had wide experience in the marketing of petroleum products, succeeds as field secretary of the Michigan Oil Men's association here, Wayne C. Hughes, who resigned Aug. 15. Mr. Garvey took up his new duties on that date.

Mr. Garvey has been in the oil business for some 18 years. He started as office boy, and worked his way upward until he became general manager of the former George W. Tubbs Oil Co., Grand Rapids. Mr. Garvey has been in turn tank wagon driver, service station attendant, sales manager and superintendent of distribution, from which he has gained a thorough training and practical experience in the marketing branch of the industry.

Until recently he was in business for himself in Chicago suburbs.

Mr. Hughes has not announced what his plans for the future are. Before becoming secretary of the Michigan Jobbers' association, he was secretary of the Ohio Petroleum Marketers' Association.

## Big Spring Refining Co. Starts New Texas Plant

TULSA, Sept. 3.—Operations of its newly completed refinery will be begun this week by the Big Spring Refining Co. of Big Spring, Tex., according to an announcement by H. C. Petersen, president. The first unit of the 5,000-barrel plant has been completed and was tested out on preliminary runs last week.

Announcement was made that the output of the refinery will be sold through the Altitude Petroleum Co. of Tulsa and Chicago, under a contract arrangement.

The Big Spring plant was designed by Mr. Petersen who is a refining engineer of many years' experience. It consists of a compact pipe still equipped with 4 by 40-foot bubble towers, a continuous treating plant for finished products and a crude treating and preheating plant designed to sweeten crude before it is charged to the still.

The plant is connected with the Howard county oil fields by 20 miles of 6-inch main line and a system of gathering lines through the field. The Howard county fields produce several grades of crude ranging from 27 to 34 A.P.I. gravity. The higher gravity oil yields about 27 per cent gasoline while the low gravity sour crudes yield about 22 to 23 per cent gasoline. It is claimed that the gasoline produced has a benzol equivalent of 25 to 35 per cent. The company has crude contracts extending over a 2-year period.

The Altitude is providing the company with 300 tank cars in which to move the plant's products. In addition to marketing the refined oil output, the Altitude expects to market crude oil by tank car which will be pumped through the pipeline to the refinery loading rack.

Initial runs of the plant will be about 3,500 barrels per day. As markets are developed, runs will be stepped up to the present plant capacity of 5,000 barrels per day. Refinery storage consists of two 25,000-barrel crude tanks, three 10,000-barrel fuel tanks and twelve 1,000-barrel refined oil tanks.

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### Oil Man's Brother Is Kellogg Aid

SISTERSVILLE, W. Va., Sept. 1.—Major J. Reuben Clark, brother of Frank R. Clark, formerly chief geologist of the Trico organization and now chief geologist with the Mid-Kansas Oil & Gas Co., Tulsa, recently was appointed by President Coolidge as under secretary of state. Major Clark will be in charge of the department of state during the absence of Secretary of State Frank B. Kellogg in Europe.

# Refiners Watch Railroad Dispute; Strike Is Not Expected

TULSA, Sept. 1.—Refiners in the Mid-Continent are watching with an anxious eye the progress of wage and working condition negotiations between western railroads and the Brotherhood of Railroad Trainmen and the Order of Railway Conductors. The threat of a strike has given rise to some uneasiness.

While it is unthinkable to most executives that a transportation strike would be called, the results of such a catastrophe have been considered.

Up to a certain point a railroad strike would increase the consumption of petroleum products, particularly gasoline and lubricating oils. Movement of commodities to meet the needs of consumers would have to be undertaken by motor vehicles with the result that gasoline consumption would mount far above normal levels.

But within a short time the problem of fueling motor vehicles in communities without oil refineries would become a serious matter. Existing tank wagon facilities could not hope to cope with the situation even though every tank wagon serving the country trade should be pressed into the service of transporting gasoline from refinery to filling station. The tankage capacity of bulk and filling stations of the middle west would be a limiting factor in increased gasoline business which might result from a strike.

If notice of a strike were to be given undoubtedly every distributor of gasoline would seek to fill his tanks as a matter of protection. Such a concerted buying move would of itself create a chaotic condition and a runaway market.

Of course any such buying stampede would be followed by a reaction, particularly if the threatened strike should be settled quickly after having been actually called.

In the case of fuel oils any railroad strike would be unfortunate in that it would reduce the consumption of fuel by the railroads. Railroad fuel purchases make up a substantial part of the fuel oil outlet in the Mid-Continent. Industrial fuel consumption outside of the railroads would suffer likewise due limitations in the storage capacity of consumers and to factory closings which would become necessary quickly after railroads failed to bring in the daily supplies of raw material and carry away finished products.

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### Dick Tyler Tours Canada

CONNEAUT, O., Aug. 30.—Dick Tyler, head of the Tyler oil company, is touring Canada around the North Bay country. He is accompanied by R. W. Loomis, for 10 years attendant at Dick's main service station. They are to return around the middle of September. A son, J. Albert Tyler, is camping out in Canada and expects to join his father on the return trip. H. B. Tyler, another son, is in charge of the business during his father's absence.

WASHINGTON, Sept. 1.—A strong belief, amounting almost to a conviction, prevails in Washington that there will be no strike of railroad trainmen in the territory west of the Mississippi River.

The men are voting on the question of strike or no strike but at the same time their leaders have made an agreement with the railroad executives which, it is believed, will be endorsed by the general committees representing the conductors' organization and the trainmen's brotherhood.

They made that agreement under the auspices of the United States Board of Mediation the latter part of last week. The committees will vote this week.

Acceptance of the agreement will remove the possibility of a strike. A strike will be voted on so as to place a club in the hands of the union leaders. Use of the club has almost been made impossible by the agreement of the big leaders with the executives of the railroads. It is possible but not probable that the general committees will withhold their assent.

No part of the agreement has been made public except the promise of the labor leaders that, in the event of the rejection of the compromise by the general committees, President Coolidge and the Board of Mediation will be given a reasonable opportunity to proceed under the law with efforts to bring about a settlement in advance of a strike.

Compromise is expected because, thus far, the threat of a strike has not produced the slightest political reaction; that is to say no move has been made by any political leaders to make political capital.

The western trainmen are dissatisfied because, in an arbitration last fall, they obtained nothing while the eastern and southern men got increases ranging from 6 to 7.5 per cent. They appealed from the arbitration by renewing a demand for 7.5 per cent increase. The railroads offered a 7.5 per cent increase if the men would consent to a change in the rules which the railroads assert forces them to use more brakemen than are needed, or a 6.5 per cent increase if they insisted upon the observance of the rule requiring waste, as the railroad managers think it does.

# Transactions in Oil Shares on New York Stock Exchange

| 1927 High | 1927 Low | 1928 High | 1928 Low | Listed Capital | Par Value | Stocks | Div. Rate | Last Paid | Transactions Week Ended Aug. 31 Sales | First | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 37⅛ | 27⅝ | 38 | 27⅛ | (sh) 922,075 | N.P. | Amerada Corp. | 50cQ | July 31, 28 | 3,400 | 30¾ | 31 | 30¼ | 30¼ | — |
| 82½ | 35⅛ | 85 | 51¼ | (sh) 209,180 | N.P. | American Republics Corp. | .... | .... | 4,300 | 67 | 68 | 64½ | 66 | 0 |
| 50¼ | 35 | 51¼ | 37½ | $56,000,000 | $ 25 | Associated Oil. | 50cQ | June 30, 28 | 210 | 50 | 50 | 48½ | 47½ | — 1½ |
| 131⅝ | 104 | 171¾ | 95¾ | 50,000,000 | 100 | Atlantic Refining. | $1Q | June 15, 28 | 36,400 | 170 | *171¾ | 165½ | 170½ | + 4 |
| 119 | 115½ | 118¼ | 115 | 20,000,000 | 100 | do pfd. | $1.75Q | Aug. 1, 28 | .... | .... | .... | .... | .... | .... |
| 35½ | 20¾ | 29½ | 20½ | 28,725,675 | 25 | Barnsdall Corp. A. | .... | Feb. 6, 28 | 135,000 | 26⅞ | *29½ | 26 | 29 | + 2 |
| 32½ | 20½ | 27¼ | 22 | 799,775 | 25 | do B. | .... | Feb. 6, 28 | 200 | 26¼ | 26½ | 26¼ | 26¼ | + 2½ |
| 18¼ | 14 | 20¼ | 12¼ | 945,888 | N.P. | Beacon Oil. | .... | .... | 4,300 | 16½ | 16⅝ | 16 | 16⅜ | — ⅝ |
| 32⅞ | 20 | 32⅜ | 24 | 51,524,150 | 25 | California Petroleum. | 25cQ | July 2, 28 | 200 | 31⅝ | 31⅝ | 31¼ | 31½ | 0 |
| 96¾ | 65 | 94⅞ | 70 | 20,785,400 | 100 | General Asphalt. | .... | .... | 25,600 | 75 | 78⅜ | 74¼ | 76 | + 1 |
| 144⅞ | 107¼ | 141½ | 111 | 6,792,200 | 100 | do pfd. | $1.25Q | Sept. 1, 28 | 2,500 | 115⅝ | 119¾ | 115⅜ | 119⅜ | + 1⅞ |
| 175¾ | 60⅛ | 167 | 127 | 25,000,000 | 100 | Houston Oil. | .... | .... | 22,400 | 144¾ | 145 | 138¾ | 142 | — 1¼ |
| 32¾ | 17⅝ | 31⅞ | 21¾ | (sh) 500,000 | N.P. | Independent Oil & Gas. | 25cQ | July 31, 28 | 6,200 | 26½ | 26½ | 25¾ | 25¾ | — ⅝ |
| 12⅛ | 7⅝ | 39⅝ | 9 | $3,280,340 | $10 | Indian Refining. | .... | Dec. 15, 20 | 47,700 | 35 | 35⅝ | 32⅝ | 33½ | — ⅞ |
| 12 | 7¼ | 37¼ | 8½ | 4,550,110 | 10 | do ctfs. | .... | .... | 22,700 | 32¾ | 33⅜ | 30⅞ | 31⅞ | — ⅝ |
| 112 | 99 | 250 | 101 | 2,296,400 | 100 | do pfd. | .... | Dec. 15, 21 | 200 | 245¼ | *250 | 245¼ | 250 | + 6 |
| 37¾ | 20½ | 39⅛ | 27⅝ | (sh) 3,992,122 | N.P. | Lago Oil & Transport. | 75cQ | May 1, 28 | 500 | 31 | 31 | 31 | 31 | 0 |
| 18⅞ | 10 | 19¾ | 9⅜ | (sh) 1,237,078 | N.P. | Louisiana Oil Refining. | .... | .... | 7,600 | 14½ | 14⅝ | 13⅝ | 13¾ | — ⅝ |
| 97 | 85¼ | 101 | 78 | $4,000,000 | $100 | do pfd. | $1.50Q | Aug. 15, 28 | .... | .... | .... | .... | .... | .... |
| 22¾ | 12 | 25½ | 12½ | (sh) 330,000 | N.P. | Maracaibo Oil. | .... | .... | 1,600 | 17 | 17 | 16¼ | 16¼ | 0 |
| 58½ | 31 | 44½ | 33 | (sh) 2,316,692 | N.P. | Marland Oil Co. | .... | Mar. 31, 27 | 17,800 | 38 | 38 | 36½ | 37⅛ | — ⅞ |
| 320 | 200 | 360 | 250 | $45,942,800 | $100 | Mexican Petroleum. | $3Q | July 20, 28 | ..... | .... | .... | .... | .... | .... |
| .... | .... | .... | .... | 12,000,000 | 100 | do pfd. | $2Q | July 20, 28 | .... | .... | .... | .... | .... | .... |
| 9¼ | 3 | 39 | 4⅝ | (sh) 945,939 | N.P. | Mexican Seaboard. | .... | Nov. 15, 24 | 80,100 | 31⅞ | 32 | 29⅛ | 30 | — 1½ |
| 39⅜ | 25½ | 33¼ | 25⅛ | (sh) 1,357,461 | N.P. | Mid-Continent Petroleum. | .... | Aug. 1, 27 | 7,900 | 30⅛ | 30¾ | 29 | 29 | — 1 |
| 105 | 97 | 115⅛ | 103¼ | $6,718,000 | $100 | do pfd. | $1.75Q | Sept. 1, 28 | .... | .... | .... | .... | .... | .... |
| 3¾ | 1⅝ | 7⅜ | 2⅜ | 24,298,850 | 10 | Middle States. | .... | July 1, 23 | 5,500 | 4⅞ | 4⅞ | 4½ | 4½ | — ⅛ |
| 2¾ | 1⅛ | 5⅞ | 1½ | 5,501,370 | 10 | do ctfs. | .... | .... | 4,300 | 3½ | 3⅝ | 3⅛ | 3⅛ | — ⅛ |
| 1⅞ | 1 | 2¼ | 1¼ | (sh) 3,500,000 | N.P. | Pacific Oil. | .... | .... | 3,800 | 1¼ | 1⅜ | 1¼ | 1¼ | 0 |
| 65⅞ | 40⅛ | 53¾ | 38¼ | $48,807,400 | $ 50 | Pan American P. & T. | .... | Oct. 20, 27 | 5,700 | 40½ | 40½ | 39 | 39½ | — 1½ |
| 66⅜ | 40¼ | 54⅝ | 37⅜ | 121,097,900 | 50 | do B. | .... | Oct. 20, 27 | 24,500 | 42¼ | 42¼ | 40 | 40½ | — 1⅜ |
| 37⅞ | 16¾ | 28⅜ | 15½ | (sh) 400,000 | N.P. | Pan American Western B. | .... | Jan. 30, 27 | 3,400 | 17 | 17⅛ | 17 | 17 | 0 |
| 18⅞ | 8 | 21⅜ | 11½ | (sh) 198,770 | N.P. | Panhandle P. & R. | .... | .... | 800 | 14⅛ | 15 | 14 | 14⅛ | — 1¼ |
| 83 | 54 | 106¼ | 70 | $2,935,200 | $100 | do pfd. | .... | July 2, 23 | .... | .... | .... | .... | .... | .... |
| 60¼ | 36¼ | 44⅝ | 35¼ | (sh) 2,406,796 | N.P. | Phillips Petroleum. | 37½cQ | July 2, 28 | 12,500 | 39⅞ | 39⅞ | 38¾ | 39½ | 0 |
| 1⅜ | ½ | 4¼ | ½ | $29,622,925 | $ 25 | Pierce Oil Corp. | .... | .... | 9,800 | 2⅜ | 2½ | 2⅛ | 2⅛ | — ⅛ |
| 24 | 13½ | 30½ | 16¼ | 15,000,000 | 100 | do pfd. | .... | Feb. 1, 22 | 300 | 17½ | 18⅛ | 17½ | 18⅛ | — 1⅛ |
| 5½ | 2½ | 6⅝ | 3½ | (sh) 2,500,000 | N.P. | Pierce Petroleum. | .... | .... | 6,700 | 4 | 4⅛ | 4 | 4 | — ⅛ |
| 33⅞ | 16¾ | 26⅞ | 16 | $37,450,850 | $50 | Producers & Refiners. | .... | Sept. 15, 23 | 1,000 | 24¾ | 24½ | 23½ | 23¾ | — ⅞ |
| 50 | 36⅞ | 46⅞ | 41 | 2,845,350 | 50 | do pfd. | .... | May 1, 25 | 80 | 42¼ | 42¼ | 42¼ | 42¼ | — ¼ |
| 33½ | 25 | 27½ | 19 | 75,959,250 | 25 | Pure Oil Co. | 12½cQ | Sept. 1, 28 | 33,800 | 23 | 24⅜ | 22⅝ | 23⅞ | + ⅞ |
| 115½ | 111⅜ | 115 | 108 | 13,000,000 | 100 | do 8% pfd. | $2Q | July 2, 28 | 20 | 113 | 113¼ | 113 | 113¼ | + ¾ |
| 28⅛ | 25⅜ | 50¾ | 24 | $29,224,894 | $25 | Richfield Oil. | ‡25cQ | Aug. 15, 28 | 68,900 | 47⅞ | 49½ | 46 | 49 | + 1½ |
| 54½ | 44¼ | 59¼ | 44⅝ | (sh) 611,303 | 13.40 | Royal Dutch, N. Y. shares. | $1.879 | Aug. 3, 28 | 2,900 | 59⅛ | 49¼ | 58¾ | 58¾ | — ⅞ |
| 47⅞ | 41⅜ | 51 | 40⅝ | (sh) 77,590 | L2 | Shell Transport & T. | $1.455 | July 23, 28 | .... | .... | .... | .... | .... | .... |
| 31¾ | 24⅝ | 31 | 23¼ | (sh) 10,000,000 | N.P. | Shell Union Oil. | 35cQ | June 30, 28 | 7,400 | 25¾ | 26⅞ | 26⅜ | 26½ | — ⅜ |
| 26⅜ | 14¼ | 24⅜ | 18⅛ | $7,208,080 | $ 10 | Simms Petroleum. | .... | Apr. 1, 27 | 5,400 | 21 | 21 | 20½ | 20½ | — ¼ |
| 22⅜ | 15 | 30¼ | 17⅜ | (sh) 4,501,915 | N.P. | Sinclair Consolidated. | .... | May 31, 24 | 49,200 | 26½ | 26⅝ | 25½ | 25⅝ | — 1½ |
| 104½ | 97 | 109½ | 102½ | $16,604,600 | $100 | do pfd. | $2Q | Aug. 15, 28 | .... | .... | .... | .... | .... | .... |
| 37⅜ | 24⅛ | 34 | 25 | 27,396,590 | 25 | Skelly Oil Co. | 50cQ | June 15, 28 | 3,500 | 31⅛ | 31⅜ | †30 | 30 | — 1¼ |
| 60¾ | 50⅜ | 63⅞ | 53 | (sh) 13,016,434 | N.P. | S. O. California. | 62½cQ | June 15, 28 | 6,800 | 58 | 58¾ | 57⅝ | 58½ | 0 |
| 41⅜ | 35⅛ | 49 | 37¾ | $607,910,525 | $ 25 | S. O. New Jersey. | ‡25cQ | June 15, 28 | 41,800 | 45 | 45⅝ | 44¾ | 44¾ | — ½ |
| 34⅛ | 29¾ | 41½ | 28¾ | 427,973,275 | 25 | S. O. New York. | 40cQ | June 15, 28 | 37,300 | 35⅞ | 35⅞ | 35½ | 35¼ | — ⅝ |
| 34⅞ | 30 | 54⅞ | 31½ | (sh) 1,206,073 | N.P. | Sun Oil. | 25cQ | June 15, 28 | 19,700 | 48⅞ | *54⅞ | 48⅞ | 54½ | + 6¾ |
| 101⅝ | 99 | 109½ | 100 | $5,000,000 | $100 | do pfd. | $1.50Q | Sept 1, 28 | .... | .... | .... | .... | .... | .... |
| 6½ | 3⅛ | 9½ | 2½ | (sh) 1,121,368 | N.P. | Superior Oil Corp. | .... | Dec. 20, 20 | 5,000 | 7 | 7 | 6½ | 6⅝ | — ⅛ |
| 58 | 45 | 66⅜ | 50 | $180,480,550 | $ 25 | The Texas Corp. | 75cQ | July 2, 28 | 34,400 | 63⅜ | 63½ | 61¾ | 63 | + ⅛ |
| 18⅞ | 12 | 17½ | 12½ | 8,380,340 | 10 | Texas Pacific Coal & Oil. | .... | Jan. 3, 28 | 3,700 | 13⅞ | 13⅞ | 13⅜ | 13⅞ | — ⅛ |
| 29⅛ | 19 | 27⅜ | 19⅝ | (sh) 2,168,410 | N.P. | Tide Water Oil Co. | 20cQ | June 30, 28 | ..... | .... | .... | .... | .... | .... |
| 90⅛ | 85 | 94½ | 87 | $20,705,200 | $100 | do 5½% pfd. | $1.25Q | Aug. 15, 28 | 300 | 88¾ | 89 | 88¾ | 89 | + ⅜ |
| 19⅛ | 15⅜ | 22½ | 14¾ | (sh) 4,796,158 | N.P. | Tide Water Associated. | .... | Aug. 1, 27 | 73,300 | 21¼ | 21¾ | 20½ | 20⅝ | + ⅛ |
| 90¾ | 85 | 90 | 82⅛ | $72,745,900 | $100 | do pfd. | $1.50Q | July 2, 28 | 100 | 89½ | 89½ | 88½ | 88½ | — ¾ |
| 10¾ | 3¾ | 10⅛ | 7 | (sh) 3,742,029 | N.P. | Transcontinental Oil. | .... | .... | 13,600 | 7⅞ | 7⅞ | 7⅝ | 7⅝ | — ⅜ |
| 56½ | 39⅝ | 57 | 42¾ | $40,791,225 | $ 25 | Union Oil of California. | 50cQ | Aug. 10, 28 | 3,500 | 50¼ | 50½ | 50 | 50 | — ⅝ |
| 127½ | 94 | 128⅛ | 115 | 30,844,000 | 100 | Union Tank Car Co. | $1.25Q | Sept. 1, 28 | 200 | 117 | 117 | †115 | 115 | — 1¾ |
| 34½ | 24½ | 41¼ | 26 | (sh) 355,440 | N.P. | Warner Quinlan. | 50cQ | July 2, 28 | 49,200 | 38¾ | *41¼ | 38⅛ | 40¼ | + 1½ |
| 27½ | 20 | 26⅝ | 20⅛ | (sh) 490,000 | N.P. | White Eagle Oil & Refining. | 25cQ | July 20, 28 | 2,100 | 25 | 25½ | 24¾ | 24¾ | — ⅝ |

*New High †New Low ‡Also extras s-Stock Total Sales 967,310

# Pittsburgh Stock Exchange

| 1927 High | 1927 Low | 1928 High | 1928 Low | Par Value | Stocks | Transactions Week Ended Aug. 31 Sales | First | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .... | .... | 4 | 2½ | N.P. | Ark. Nat. Gas (new). | 4,137 | 2¾ | 3 | 2¾ | 3 | + ⅛ |
| .... | .... | 7½ | 6¾ | N.P. | do pfd. | 2,989 | 7½ | 7½ | 7¼ | 7¼ | 0 |
| 98⅜ | 80⅞ | 120¼ | 90¾ | 100 | Columbia Gas. | ..... | .... | .... | .... | .... | .... |
| 107⅞ | 100 | 108½ | 107 | 100 | do pfd. | ..... | .... | .... | .... | .... | .... |
| 15 | 7½ | 10 | 6⅞ | 10 | Devonian Oil. | 39 | 6⅞ | 7 | 6⅞ | 7 | + ⅛ |
| .... | .... | 15 | 9¾ | 10 | Dixie Gas & Util. | ..... | .... | .... | .... | .... | .... |
| .... | .... | 95 | 85 | 100 | do pfd. | ..... | .... | .... | .... | .... | .... |
| 117½ | 115 | 116 | 115 | 100 | Duquesne Light pfd. | ..... | .... | .... | .... | .... | .... |
| .... | .... | 85 | 80½ | 100 | Fayette County Gas. | ..... | .... | .... | .... | .... | .... |
| 12¼ | 6 | 22 | 12 | N.P. | Houston Gulf Gas. | ..... | .... | .... | .... | .... | .... |
| 59¾ | 37¼ | 58 | 48⅝ | $ 25 | Lone Star Gas. | 2,641 | 52 | 55 | 52 | 54 | + 2¼ |
| .... | .... | 36½ | 36 | 25 | Petroleum Exploration | ..... | .... | .... | .... | .... | .... |
| .... | .... | 50 | 50 | .... | Phoenix Oil pfd. | ..... | .... | .... | .... | .... | .... |
| 3⅞ | 3 | 4 | 3¼ | 5 | Pittsburgh Oil & Gas. | 150 | 3¼ | 3¼ | 3¼ | 3¼ | 0 |
| 8 | 5½ | 7¼ | 6 | 10 | Salt Creek Cons. | 70 | 6½ | 6½ | 6½ | 6½ | + ¼ |
| 26½ | 17 | 22 | 16¾ | 10 | Tidal Osage. | 100 | 17 | 17 | 17 | 17 | 0 |
| 43 | 33 | 33⅝ | 30½ | N.P. | Waverly Oil Wks. A | ..... | .... | .... | .... | .... | .... |
| .... | .... | 19 | 17½ | $ 25 | Wiser Oil. | 50 | 17½ | 17½ | 17½ | 17½ | 0 |

*New high record †New low.

# Pittsburgh Curb Exchange

| 1927 High | 1927 Low | 1928 High | 1928 Low | Par Value | Stocks | Transactions Week Ended Aug. 31 Sales | First | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 95 | 88 | 132 | 120 | 25 | Gulf Oil. | ..... | .... | .... | .... | .... | .... |
| .... | .... | 115 | 115 | .... | Houston Gulf Gas pfd. | ..... | .... | .... | .... | .... | .... |
| 10¾ | 5⅛ | 9 | 5½ | 25 | Leonard Oil & Dev. | ..... | .... | .... | .... | .... | .... |
| .... | .... | .40 | .20 | .... | Phoenix Oil. | ..... | .... | .... | .... | .... | .... |
| 2¼ | 1¾ | .... | .... | 5 | Pittsburgh Oil Dev. | ..... | .... | .... | .... | .... | .... |
| 31 | 19 | 22 | 16¾ | 5 | Plymouth Oil. | 310 | 19 | 19¾ | 19 | 19¾ | — ⅛ |
| 6 | 5 | 4¾ | 4 | 5 | States Oil. | ..... | .... | .... | .... | .... | .... |
| 3⅛ | 1½ | 4½ | 2¼ | 1 | Texon Oil & Land. | 100 | 3⅛ | 3⅛ | 3⅛ | 3⅛ | + 1/16 |
| 25⅝ | 18 | 18 | 15 | 10 | Tidal Osage Non-vgt. | ..... | .... | .... | .... | .... | .... |

*New High †New Low x Ex Dividend

# Oil Dividends

| | Amount | Payable | Stock of Record |
|---|---|---|---|
| Tidal Osage Oil q. | .....50c | Sept. 15 | Sept 5 |

Ingersoll-Rand Co., 11 Broadway, New York, has developed a line of riveting hammers in four sizes, having strokes of 5, 6, 8 and 9 inches. An important feature is the manner in which the handle is fastened to the barrel and kept tightly in place by a spring locking device. The handle is threaded on to the barrel and the spring lock not only prevents the handle from unscrewing but applies tension to automatically tighten it.

Celite Products Co., Chicago and Los Angeles, has put out a folder in colors describing the use of Celite in concrete. This use is said to make concrete water tight and to give it greater strength, as well as increasing the volume of the concrete itself, when added in the proportion of from 2 to 5 pounds of Celite to the bag of cement.

ECO
AUTOMATIC
AIR STATION

# Leadership

Fundamentally right in basic principles and carefully refined through years of actual service, ECO Automatic Air Stations now occupy a position of unquestioned leadership.

Fourteen years ago the first ECO Air Stations were made, and sold when free air service was almost unknown.

Since that time ECO has always been the pioneer and leader in the development of air service equipment.

ECO Automatic Air Stations have long since passed the experimental stages through which every mechanical device must go. In their present refined form they offer a class of air service which truly meets modern motor car requirements.

The proven business-building value of ECO Air Stations is the direct result of their superior, unequalled service to your customers.

**Service Station Equipment Co.**
**310 Enterprise St., Bryan, O., U. S. A.**

*In Canada:* Service Station Equipment Co., Limited
510 King St., East Toronto—2

- ☐ CAR WASHERS
- ☐ AUTOMATIC AIR STATIONS
- ☐ AIR COMPRESSORS
- ☐ PAINT SPRAY EQUIPMENT

Name.....

Address.....City.....

# Standard Oil Stocks on New York Curb

| 1927 High | 1927 Low | 1928 High | 1928 Low | Outstanding Capital | Par Value | Stocks | Div. Rate | Last Paid | Transactions Week Ended Aug. 31 Sales | First | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21⅝ | 17⅞ | 22¾ | 17 | £ 4,126,460 | £ 1 | Anglo-American Oil | 24.4c | June 6, 28 | 300 | 18⅜ | 18⅝ | 17⅞ | 17⅞ | — ⅜ |
| 21½ | 17⅝ | 20½ | 16⅜ | ..... | £ 1 | do cts. non-voting | ..... | ..... | 300 | 17¾ | 18⅜ | 17⅜ | 17⅜ | — ½ |
| 3⅜ | ¾ | 5 | 1¼ | (sh) 500.000 | N.P. | Atlantic Lobos | ..... | ..... | 100 | 2⅛ | 2⅛ | 2⅛ | 2⅛ | — ⅜ |
| 6½ | 2½ | 9¾ | 3¼ | $ 10.000.000 | $ 50 | do pfd | ..... | ..... | 100 | 5¼ | 5¼ | 5¼ | 5¼ | 0 |
| 69 | 50 | 56 | 49 | 1,000,000 | 25 | Borne Scrymser | ‡$1S.A. | Apr. 16, 28 | ..... | ..... | ..... | ..... | ..... | ..... |
| 60 | 45 | 76 | 58 | 10.000.000 | 50 | Buckeye Pipe Line | ‡$1Q | June 15, 28 | 400 | 61¼ | 61¼ | 60 | 61 | — ¼ |
| 126 | 76½ | 161 | 117¼ | 3,000,000 | 25 | Chesebrough Mfg | $1Q | June 30, 28 | 600 | 144 | 144 | 137½ | 137½ | — 3½ |
| 22⅜ | 16¼ | 23 | 16 | 36,123,350 | 10 | Continental Oil | ..... | Dec. 15, 27 | 3,800 | 16½ | 17½ | 16¼ | 17 | + ¾ |
| 137 | 89 | 114 | 88 | 3,000,000 | 100 | Cumberland Pipe Line | ‡$2Q | June 15, 28 | 50 | 99 | 99 | 99 | 99 | — 4¾ |
| 68½ | 47 | 88 | 64½ | 5,000,000 | 100 | Eureka Pipe Line | $1Q | Aug. 1, 28 | 50 | 69 | 69 | 69 | 69 | — 1 |
| 13½ | 3½ | 13 | 5 | 16.000.000 | 100 | Galena Signal Oil | ..... | June 30, 25 | 200 | 8 | 8¼ | 8 | 8¼ | — ¾ |
| 59¾ | 23 | 87¾ | 27 | 4.000.000 | 100 | do new pfd | ..... | June 30, 26 | 470 | 82 | 83¼ | 81½ | 82¾ | + 1½ |
| 60⅛ | 35½ | 89¾ | 35 | 2.000.000 | 100 | do old pfd | ..... | June 30, 26 | 280 | 81½ | 85½ | 81¾ | 82¾ | + 1½ |
| 68½ | 54 | 84⅞ | 60 | 73 685,700 | 25 | Humble Oil & Refining | ‡30cQ | July 1, 28 | 1,800 | 79⅞ | 80⅛ | 78¼ | 79⅜ | — ⅝ |
| 182 | 123¾ | 245 | 176½ | 20 000.000 | 100 | Illinois Pipe Line | $6S.A. | June 15, 28 | 1.650 | 207¼ | 238 | 206¾ | 235 | +27¾ |
| 64¾ | 37¾ | 71⅞ | 56¾ | (sh) 6,591,458 | N.P. | Imperial of Canada | ‡25cQ | Sept. 1, 28 | 500 | 68 | 69 | 68 | 69 | + 1 |
| 94½ | 61 | 89½ | 74⅞ | $ 5.000.000 | $ 50 | Indiana Pipe Line | ‡$1Q | Aug. 15, 28 | 200 | 80⅞ | 80¼ | 80 | 80 | — ⅞ |
| 39 | 28¼ | 45¼ | 35 | (sh) 7,123,544 | N.P. | International Petroleum | 25c | June 30, 28 | 3,500 | 38¼ | 38 | 37⅛ | 37½ | — ½ |
| 24 | 13¼ | 32⅜ | 19⅜ | 6.363.350 | 12 50 | National Transit Co | ‡25cQ | June 15, 28 | 1,400 | 21⅜ | 22½ | 21⅜ | 21⅝ | + ⅝ |
| 44½ | 31¼ | 59⅛ | 37½ | 5.000.000 | 100 | New York Transit | ..... | July 15, 26 | ..... | ..... | ..... | ..... | ..... | ..... |
| 100 | 70 | 125 | 94 | 4.000.000 | 100 | Northern Pipe Line | (a)$3S.A. | July 2, 28 | ..... | ..... | ..... | ..... | ..... | ..... |
| 67⅞ | 52 | 68¼ | 58 | 60,000.000 | 25 | Ohio Oil Co | ‡50cQ | June 15, 28 | 1,300 | 62⅛ | 61⅞ | 61⅝ | 61⅝ | — ½ |
| 39 | 12 | 84 | 28 | 10,000.000 | 25 | Penn Mex. Fuel | $1.25 | May 31, 28 | 100 | 35 | 35 | 35 | 35 | 0 |
| 55½ | 45⅜ | 56 | 46⅛ | 60,479.600 | 25 | Prairie Oil & Gas | ..... | Aug. 31, 27 | 2.800 | 46¾ | 46¾ | ‡46¼ | 46¼ | — ¾ |
| 190 | 132 | 223 | 172 | 81.000.000 | 100 | Prairie Pipe Line | $3.50Q | July 31, 28 | 1,700 | 184¾ | 194 | 183 | 194 | + 9¼ |
| 201½ | 175½ | 186 | 167 | 4,000,000 | 100 | Solar Refining | $5S.A. | June 20, 28 | ..... | ..... | ..... | ..... | ..... | ..... |
| 27¼ | 15½ | 35⅞ | 12 | 1,000.000 | 10 | Southern Pipe Line | $2 | Dec. 1, 27 | 500 | 16 | 19 | 16 | 19 | + 3 |
| 41½ | 35 | 53 | 36¾ | 20.000.000 | 25 | South Penn Oil | 50cQ | June 30, 28 | 1,200 | 49 | 49⅛ | 48½ | 49⅛ | + ⅛ |
| 83 | 55½ | 100¾ | 70 | 3,500.000 | 100 | South West Pa. Pipe Lines | ‡$1Q | July 2, 28 | 100 | 84 | 84 | 84 | 84 | + 4 |
| 81½ | 64⅝ | 83⅜ | 70⅞ | 230,788.513 | 25 | S. O. Indiana | ‡62½cQ | June 15, 28 | 5,200 | 75⅜ | 75⅞ | 74¾ | 75¼ | — ⅛ |
| 20⅞ | 14⅝ | 27¾ | 15 | 8.000.000 | 25 | S. O. Kansas | ..... | June 16, 24 | 800 | 21⅝ | 21¾ | 21⅛ | 21¾ | 0 |
| 130 | 111½ | 136⅛ | 122¼ | 17,103,011 | 25 | S. O. Kentucky | $1Q | June 30, 28 | 2,200 | 127¼ | 130 | 126½ | 130 | + 2⅞ |
| 49½ | 40 | 45⅞ | 39⅞ | 4.601.100 | 25 | S. O. Nebraska | 62cQ | June 20, 28 | 200 | 43½ | 44 | 43 | 44 | + ⅞ |
| 87½ | 72 | 84¾ | 71 | 14.000.000 | 25 | S. O. Ohio | 62½cQ | Apr. 2, 28 | 1,350 | 81½ | 84¾ | 83 | 83¼ | + 2¼ |
| 122 | 117¼ | 125 | 117 | 7.000.000 | 100 | do pfd | $1.75Q | Sept. 1, 28 | 20 | 120¾ | 120¾ | 120¾ | 119 | — 1 |
| 21 | 14½ | 26 | 16 | 30.844.000 | 25 | Swan Finch Co | 30cQ | June 30, 28 | 100 | 23 | 23 | 23 | 23 | + ½ |
| .... | .... | 87⅛ | 72 | 124.941.600 | 25 | Vacuum Oil | 75cQ | June 20, 28 | 2,500 | 82⅛ | 82 | 80 | 80 | — 2¼ |

*New high †New low xEx dividend ‡Also extras. (a)$50 Special Sept. 1, 1928.

# Independent Oils on New York Curb

| 1927 High | 1927 Low | 1928 High | 1928 Low | Par Value | Stocks | Transactions Sales | Week Ended Aug. 31 First | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2⅞ | .55 | 1¼ | .65 | $ 5 | Amer. Con. Oilfields | 18,800 | .71 | .75 | .66 | .75 | + .1 |
| 7½ | 2¾ | 6⅝ | 3⅛ | N.P. | Amer. Maracaibo | 2.200 | 4⅝ | 4⅝ | 4¼ | 4½ | — ⅛ |
| 2⅜ | 1 | 4 | 2¼ | $ 10 | Argo Oil | 100 | 2¾ | 2¾ | 2⅜ | 2⅜ | + ¼ |
| 9¾ | 6¾ | 10¼ | 7⅜ | 10 | Arkansas Nat. Gas | ..... | ..... | ..... | ..... | ..... | ..... |
| 40 | 20½ | 40½ | 32¾ | N.P. | British American | 100 | ..... | 37 | 36½ | 36½ | — 1½ |
| 28¼ | 15½ | 23⅞ | 13 | 25c | Carib Syndicate N | 1.000 | 14⅞ | 14¼ | 13⅝ | 13⅝ | — 1¼ |
| ..... | ..... | ..... | ..... | ..... | do ctfs. of dep | ..... | ..... | ..... | ..... | ..... | ..... |
| 58¾ | 40¼ | 71¼ | 54 | $ 20 | Cities Service | 11.900 | 65½ | 66½ | •65½ | 66½ | + ¾ |
| 95⅛ | 87 | 103½ | 94½ | 100 | do pfd | 1.200 | 99¾ | 100 | 99⅝ | 100 | + ¼ |
| 8⅞ | 7⅜ | 9⅝ | 8⅞ | 10 | do pfd. B | 300 | 9⅜ | 9⅜ | 9⅜ | 9⅜ | 0 |
| 29¼ | 22½ | 94 | 28¼ | 10 | do banker's shares | ..... | ..... | ..... | ..... | ..... | ..... |
| 3⅞ | 1⅜ | 2¼ | 1⅛ | 1 | Colombia Syndicate | 1.100 | 1¼ | 1⅜ | 1¼ | 1⅛ | + 1/16 |
| 9⅜ | 6⅜ | 8¼ | 6⅜ | 10 | Consolidated Royal | ..... | ..... | ..... | ..... | ..... | ..... |
| 14⅞ | 9½ | 17½ | 10 | N.P. | Creole Syndicate | 6.300 | 13⅛ | 13 | 12⅛ | 12¼ | — ⅜ |
| 3 | .50 | 3¼ | .76 | N.P. | Crown Central | 200 | 1¾ | 2 | 1¾ | 2 | 0 |
| 12 | 4 | 30⅛ | 8⅛ | N.P. | Darby Petroleum | 600 | 20½ | 20½ | 20⅛ | 20½ | — ½ |
| 11⅜ | 4 | 13½ | 7⅞ | .... | do trust ctfs | ..... | ..... | ..... | ..... | ..... | ..... |
| 2½ | .74 | 22 | 1 | N.P. | Derby Oil & Refining | 1.000 | 1⅞ | 2 | 1¾ | 1¾ | 0 |
| 16¾ | 4 | 15½ | 7½ | N.P. | do pfd | 500 | 15½ | 15½ | 15 | 15 | 0 |
| 3¾ | 1 | 2 | 1 | N.P. | Gibson Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 2 | .40 | .53 | .15 | N.P. | Gilliland ctfs | ..... | ..... | ..... | ..... | ..... | ..... |
| 118 | 86¼ | 148½ | 101⅛ | $ 25 | Gulf Oil Corp | 10.600 | 124 | 124½ | 119 | 123 | — 1 |
| 2½ | .80 | 7⅞ | 1 | 10 | Intercontinent Pet | 9.500 | 1⅜ | 1½ | 1¼ | 1⅜ | — ⅛ |
| 2¾ | 1⅜ | 3 | 1¾ | N.P. | Kirby Petroleum | 700 | 1½ | 1½ | 1½ | 1½ | — ⅛ |
| 10⅞ | 5⅛ | 9⅜ | 5½ | N.P. | Leonard Oil & Dev | 1.800 | 6 | 6½ | 6 | 6½ | + ⅛ |
| 27½ | 20 | 32⅜ | 20 | N.P. | Lion Oil & Refg | ..... | ..... | ..... | ..... | ..... | ..... |
| 59⅜ | 37 | 57 | 48⅝ | $ 25 | Lone Star Gas | 6.800 | 52 | 54⅞ | 52 | 53⅞ | + 2¼ |
| 2⅞ | .80 | 1⅞ | .78 | 1 | Magdalena Synd | 8.600 | 95 | 97 | 81 | 97 | + 5 |
| 21½ | 20⅞ | 22⅛ | 22⅛ | N.P. | Manhattan Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 52 | 12 | 45 | 36½ | N.P. | Margay Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 3 | 1½ | 40½ | 40½ | $ 10 | Mexican-Panuco | ..... | ..... | ..... | ..... | ..... | ..... |
| 12⅛ | 5 | 8 | 4 | N.P. | Mexico-Ohio Oil | 200 | 4½ | 4½ | 4½ | 4½ | 0 |
| 1½ | 1 | 1½ | .76 | $ 1 | Mountain & Gulf | 500 | 81 | 83 | 81 | 81 | 0 |
| 29¼ | 22⅜ | 28⅝ | 22⅛ | 10 | Mountain Producers | 5.000 | 23¼ | 23½ | †22⅛ | 23 | — ½ |
| 5⅞ | 4⅜ | 5⅝ | 4⅜ | 5 | New Bradford | 100 | 4⅞ | 5 | 5 | 5 | + ⅛ |
| 6¼ | 4 | 5½ | 3⅝ | 10 | New England Fuel | 100 | 4¼ | 4¼ | 4 | 4 | 0 |
| 16 | 9¼ | 11⅜ | 7⅛ | 1 | New Mex. & Ariz | 1.200 | 9¾ | 10½ | 9½ | 10½ | + ½ |
| 13⅞ | 9 | 15½ | 11½ | 25 | New York Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 12¾ | 9½ | 13¼ | 10¾ | N.P. | North Cent. Texas | 3.300 | 12½ | 12⅝ | 12⅜ | 12½ | 0 |
| 23⅞ | 21¼ | ... | ... | ... | Okla. Nat. Gas ctfs | ..... | ..... | ..... | ..... | ..... | ..... |
| 9⅜ | 3¼ | 6 | 2¼ | N.P. | Pandem | 1.500 | 3 | 3 | 2⅛ | 3 | 0 |
| 12⅜ | 7 | 15⅜ | 8½ | N.P. | Panapec Oil | 42.300 | 11⅜ | 13⅞ | 10¾ | 12¾ | + 1¾ |
| 9 | 7⅜ | 16½ | 10⅜ | $ 25 | Paragon Refg | ..... | ..... | ..... | ..... | ..... | ..... |
| .37 | .25 | 9 | 4 | N.P. | Peer Oil Corp | ..... | ..... | ..... | ..... | ..... | ..... |
| 13½ | 5⅛ | 7¾ | 5⅛ | 10 | Pennok Oil | 400 | 5¾ | 6⅛ | 5¾ | 6⅛ | + ⅝ |
| ... | ... | 4⅛ | 3⅜ | 5 | Pittsburgh Oil & Gas | ..... | ..... | ..... | ..... | ..... | ..... |
| 24⅜ | 7 | 14½ | 8 | 25 | Red Bank Oil | 200 | 9⅛ | 9⅛ | 9⅛ | 9⅛ | 0 |
| 15½ | 3½ | 13 | 4⅜ | N.P. | Reiter-Foster | 10.800 | 11½ | 11½ | 9½ | 9¾ | — 1¾ |
| 28⅜ | 15 | 31½ | 18 | $ 25 | Richfield Oil pfd | ..... | ..... | ..... | ..... | ..... | ..... |
| 7 | 4½ | 9⅞ | 4⅝ | N.P. | Ryan Consolidated | ..... | ..... | ..... | ..... | ..... | ..... |
| 8 | 5¼ | 7¼ | 5¾ | $ 10 | Salt Creek Cons | 360 | 6½ | 6½ | 6½ | 6½ | 0 |
| 35⅛ | 27¼ | 35 | 26¼ | 10 | Salt Creek Prod | 5.800 | 27⅞ | 27¾ | †26¼ | 43½ | + 6½ |
| 7 | 1¾ | 3½ | 1 | 5 | Savoy Oil | ..... | ..... | ..... | ..... | ..... | ..... |
| 26½ | 17 | 22⅞ | 13 | 10 | Tidal Osage | 900 | 16¼ | 17¼ | 16 | 17¼ | + 1¼ |
| 23¾ | 15 | 21¼ | 13⅛ | 10 | do non-voting | 900 | 16 | 17 | 16 | 17 | + 1 |
| 92 | 63½ | 87 | 75 | 100 | Transcontinental pfd | 200 | 80 | 80 | 77 | 77 | 0 |
| 23¼ | 7 | 53½ | 18 | 10 | Venezuela-Mexico | ..... | ..... | ..... | ..... | ..... | ..... |
| 7⅜ | 4¼ | 6⅝ | 4⅞ | 5 | Venezuelan Petrol | 1.000 | 5⅛ | 5⅛ | 4⅞ | 5 | + ⅛ |
| 32⅜ | 19½ | 25 | 17½ | N.P. | Wilcox Oil & Gas | 100 | 18 | 18 | 18 | 18 | 0 |
| 8 | 4¾ | 8¼ | 5½ | $ 1 | Woodley Petroleum | 100 | 5½ | 5½ | †5½ | 5½ | 0 |
| 6 | 1¾ | 8⅜ | 2⅜ | 25 | Y Oil & Gas (new) | 100 | 5⅞ | 5⅞ | 5¼ | 5¼ | — ½ |

•New High †New Low xEx Dividend

# New York Curb Bonds

Week Ending Aug. 31

| | High | Low | Last | Ch'ge |
|---|---|---|---|---|
| Beacon Oil 6s '36 | 101½ | 101 | 101 | 0 |
| Cities Service 5s '66 | 94½ | 93 | 94½ | +1⅛ |
| Cities Service 6s '66 | 103½ | 103½ | 103½ | 0 |
| Cities Service G 5½s '42 | 93¾ | 93½ | 93½ | — ¼ |
| Cont. Oil 5¼s '37 | 95 | 95 | 95 | —½ |
| Empire O & R 5½s '42 | 92½ | 92¼ | 92¼ | + ¼ |
| Galena Oil 7s '30 | 100½ | 100½ | 100½ | 0 |
| Gulf Oil 5s '37 | 100 | 99¾ | 100 | + ¼ |
| Gulf Oil 5s '47 | 100¼ | 99¾ | 100¼ | 0 |
| Independent Oil 6s '39 | 101 | 101 | 100⅞ | — ⅜ |
| Richfield Oil 6s '41 | 142 | 134 | 142 | +3¾ |
| Sun Oil 5½s '39 | 100¾ | 100¼ | 100½ | — ½ |
| Trans. Cont Oil 7s '30 | 105¾ | 105¾ | 105¾ | 0 |
| Warner Quinlan 6s '42 | 112¾ | 108¼ | 112¼ | +4½ |

# New York Bonds

Week Ending Aug. 31

| | High | Low | Last | Ch'ge |
|---|---|---|---|---|
| Assoc. Oil gold 6s | 102⅞ | 102½ | 102¾ | + ¼ |
| Atlantic Refg. deb. 5s | 100⅜ | 100 | 100⅛ | + ⅛ |
| Barnsdall Corp. 6s | 105⅞ | 104 | 106⅞ | +1⅝ |
| Barnsdall Corp. 8s ex-war. | 91¾ | 91 | 91¾ | +1 |
| Cal. Pet. 5s | 98¾ | 98 | 98 | — ½ |
| Cal. Pet. 5½s | 101 | 101 | 101 | 0 |
| General Asphalt 6s | 108½ | 107¾ | 108½ | + ½ |
| General Pet. 5s | 100⅜ | 100 | 100 | — ⅛ |
| Humble Oil & Rfg. 5½s | 101¼ | 100⅞ | 101¼ | + ⅜ |
| Humble Oil & Rfg. 5s | 99¾ | 99¼ | 99½ | 0 |
| Mid. Cont. Pet. 6½s | 105 | 105 | 105 | 0 |
| Pan Amer. P & T 6s | 102¾ | 102½ | 102¾ | — ¼ |
| Pan Amer. P & T 6s | 95 | 93¾ | 95 | +2 |
| Pure Oil 5½s | 99⅝ | 98¼ | 98½ | —1 |
| Shell Union Oil 5s | 97½ | 96½ | 97⅜ | + ⅝ |
| Simms Pet. 6s | 101 | 100½ | 100½ | 0 |
| Sinclair Con Oil 7s | 102 | 101⅛ | 101¾ | + ¼ |
| Sinclair Con Oil 6½s | 99½ | 98¾ | 99½ | + ⅜ |
| Sinclair Con Oil 6s D | 98⅞ | 98½ | 98⅞ | + ⅜ |
| Sinclair Con Oil Crude 5½s | 98 | 97½ | 98 | 0 |
| Sinclair Pipeline | 94 | 93¼ | 94 | + ⅜ |
| Skelly Oil 5½s | 92¼ | 92 | 92¼ | + ¼ |
| S. O. N. Y. 4½s | 95 | 94¼ | 95 | 0 |
| S. O. N. J. deb. 5s | 103¼ | 102½ | 102⅞ | — ½ |
| Superior Oil 7s | 100 | 100 | 100 | 0 |
| Union Oil of Calif. 6s A | 109¾ | 109¾ | 109¾ | + ¼ |
| Union Oil of Calif. 5s C | 98 | 97½ | 97½ | — ¾ |
| White Eagle Oil 5½s | 97 | 96¾ | 97 | + ½ |

# Cleveland Stock Market

| Aug. 31, | Par Value | Bid | Asked | Last Sale |
|---|---|---|---|---|
| Canfield Oil | 100 | 110 | 135 | 115 |
| do pfd | 100 | 102 | ... | 101 |
| Fred G. Clark | 10 | 5 | 7½ | 7½ |
| National Refining | 25 | 35 | 35¾ | 35 |
| do pfd | 100 | 131 | 135 | 132 |
| Paragon Refining Co | 25 | 16⅛ | 16¾ | 16 |
| do pfd | 100 | 120 | 126 | 124 |
| do ct'fs of dep | ... | 16⅛ | 17½ | 16 |

## Warning Issued Against Stock Promotions

CLEVELAND, Sept. 1.—National Better Business Bureau has just issued a warning against some stock promotion companies whose certificates have been traded on or are being traded on the Boston Curb Exchange. Among the 33 companies listed are the names of the South American Oilfields, Inc., Walkin Petroleum Corp., Quinby Oil Corp., Cheyenne Oil Co., Ace Oil & Refining Co., Consolidated Petroleum Corp., and Perpetual Petroleum Corp.

Issues of these companies have been boosted by tipster sheets which have borne such names as the "Successful Trader," "Wall Street Iconoclast," "Jones Daily Trader," "Market Wisdom," "Wall Street Chronicle," "Financial Sponsor," "Spear's Ticker Topics," "Wall Street Outlook," "Pearson's Daily Bulletin," and "Boston Daily Standard."

Names that appeared in the warning of the National Business Bureau against the stock promotions, are:

Sloan & Co., Albert G. Seidenberg, C. F. Eaton & Co., Gilbert, Palmer & Co., Nathanial Gilbert alias Nat Goldberg, Morris Young, William Harper, Jr., Abner Werblin, Guy M. Spear & Co., Chester Gumpert, Maj. Frederick J. Quinby, Paul Johnson & Co., J. H. Goddard & Co., Sherman, Gleason & Co., A. Arthur Carter, John Walklin, G. William Cristie, Dempsey & Co., J. W. Pearson & Co., John Landis, Jones & Co.

### Tank Car Net Slightly Higher

CLEVELAND, Sept. 1.—Union Tank Car Co. reports for the six months ended June 30 net income of $1,036,517 after all charges and estimated federal income tax, compared with $1,321,201 in the first half of 1927.

### Mammoth Oil Holdings To Be Sold

CASPER, Wyo., Sept. 4.—Material which cost more than $700,000 when new will be offered for sale at Teapot Dome Sept. 5, when the U. S. Navy department will offer at auction the pump station, pipe in ground, derricks and other oil field equipment, formerly the property of the Mammoth Oil Co. It is expected that the government will receive some $100,000 from this sale.

### W. L. Connelly Leaves Casper for East

CASPER, Wyo., Sept. 4.—W. L. Connelly, who has been in charge of the Mammoth Oil Co. and Sinclair interests here for six years, left Aug. 22 for New York where he will become vice-president of the Sinclair Consolidated Oil Corp. Mr. Connelly spent more than $8,000,000 in Wyoming development chiefly in Teapot Dome during those years.

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## *Patent Attorneys*

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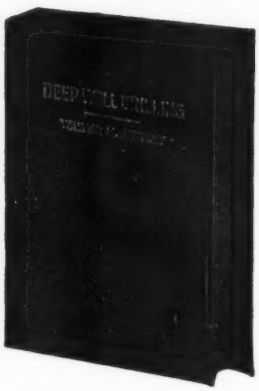

The second edition of "Deep Well Drilling" by Walter H. Jeffery is just out. The material in the first edition has been rewritten thruout with several new chapters on improvements in the art of drilling.

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Accounting Systems Co.
Adamson Mfg. Co. 91
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American La France & Foamite Corp. 47
American Machine & Foundry Co.
American Oil Pump & Tank Co.
American Oil Works Co.
American Radiator Co. 77
American Schaeffer & Budenberg Corp.
American Steel Package Co. 107
American Telephone and Telegraph Co.
Anderson-Prichard Oil Corp.
Arrow Oil Co.
Automobile Rotary Lift Co. 137

Badger & Sons Company, E. B. 65
Barnsdall Refineries, Inc.
Barrett-Cravens Co.
Barroll & Co., Henry E.
Battenfeld Grease & Oil Co. 4
Bennett Pumps Corp. 118
Berry's Jas. B. Sons, Inc. 130
Bessemer Gas Engine Co. 53
Bethlehem Steel Co.
Biggs Boiler Works Co. 78
Binks Spray Equipment Co.
Birmingham Tank Co.
Blackmer Pump Co. 14–15
Blaw-Knox Co. 72
Boe Mfg. Co.
Bowser & Co., Inc., S. F.
Braden Steel Corp.
Braun & Co., C. F.
Brown Instrument Co.
Brown Sheet Iron & Steel Co. 118
Buckeye Boiler Co.
Buckeye Iron & Brass Works
Buckeye Traction Ditcher Co.
Budd Wheel Co.
Buffalo Meter Co. 125
Butler Mfg. Co. 92

Campbell, J. A.
Canfield Oil Co., Cleveland 6–7
Carbondale Machine Co. 78
Celite Products Co. 73
Champion Pneumatic Mach. Co. 9
Champlin Refining Co. 86
Chestnut & Smith Corp.
Chrevolet Motor Co. 2
Chicago Pneumatic Tool Co. 38
Cincinnati Advertising Products Co.
Clear Vision Pump Co. 143
Columbian Steel Tank Co. 130
Combustion Engineering Corp. 5
Continental Ref. Co.
Continental Supply Co.
Correct Measure Co.
Crouse-Hinds Co.
Crown Central Petroleum Corp. Fourth Cover
Curtis Pneumatic Machinery Co.
Cushing Refg. & Gasoline Co.

Daugherty & Son Refg. Co., W. H.
Davis & Gant Mfg. Co., The 127
Davis Welding & Mfg. Co. Second Cover
Dayton Air Compressors
Dayton Pump & Mfg. Co. 109
Deepwater Oil Refineries 112
Dempster Mill Mfg. Co.
Derby Oil & Refg. Corp.
Des Moines Foundry & Machine Co.
Diebold Safe and Lock Co. 10
Draper Mfg. Co. Third Cover
Dyestuffs & Chemicals, Inc.

Edwards Mfg. Co.
Ellis & Sons, Inc., George D.
Emerson-Scheuring Tank Co.
Empire Oil Works, Inc. 140
Empire Oil & Refining Co.
Erie Meter Systems, Inc.
Ethyl Gasoline Corp.

Fairbanks Morse & Co.
Farrell Mfg. Co. 129
Federal Motor Truck Co.
Fisk Tire Co., The

Fiske Bros. Refg. Co. 91
Flexlume Corp.
Foster-Wheeler Corp. 74
Foxboro Co., Inc. 35
Franklin Creek Refg. Co.
Freedom Oil Works
Frontier Mfg. Co. 85
Fry Equipment Corp.

General Woodwork Corp.
Gilbert & Barker Mfg. Co. 96
Globe Mfg. Co.
Globe Oil & Refg. Co. 114
Goodrich Rubber Co., B. F.
Gott Mfg. Co., H. P. 71
Gousha Co., H. M.
Graham Brothers 13
Granberg Meter Corp 61
Graver Corp.
Gray Processes Corp.
Griscom-Russell Co.
Gulf Ref. Co. 132
Gustafson Bros. Oil Co. 8

Halliburton Oil Well Cementing Co. 41
Hartol Products Corp.
Haynes Stellite Co.
Heil Co., The
Heine Boiler Co. 5
Highland Body Mfg. Co.
Holmes, Ernest
Hope Engineering & Supply Co. 45
Hughes Tool Co. 56
Humble Oil & Refining Co.
Huntley & Huntley

Illinois Glass Co.
Independent Oil & Gas Co. 16
International Combustion Eng. Corp. 5
International Derrick & Equip. Co.
International Petroleum Exposition
International Harvester Co.

Jenkins Bros. 72

Kanotex Ref. Co. 104
Kellogg Co., M. W. 73
Kellogg Mfg. Co.
King-Seeley Corp.
Korect Air Meter Corp. 81

Ladd Water Tube Boiler Co. 5
Leach Co., C. H.
Leader Iron Works
Lientz & Co., B. P.
Linde Air Products Co.
Luce Trunk Co. 106

Manning, Maxwell & Moore, Inc.
Marland Refg. Co. 139
Mars Company
Martin & Schwartz, Inc.
McDonald Mfg. Co., A. Y.
McKee & Co., Arthur G.
Melrath Supply & Gasket Co.
Merco Nordstrom Valve Co.
Merit Equipment Corp.
Metal Barrel Corp.
Metal Hose & Tubing Co. 111
Metric Metal Works
Mid-Continent Petroleum Corp.
Miller Sons Co., A. D. 95
Milwaukee Tank Works 101–127
Murdock Pump Co.

National Cantube Co., Inc.
National Carbon Co., Inc. 123
National Petroleum News 12–150
National Recording Pump Co.
National Refining Co. 116
National Steel Barrel Co.
National Transit Pump & Machine Co. 67
National Tube Co. 36
Natural Gas Equipment Co. 61
Naturaline Company of America 98–99
Niles Steel Products Co.
North American Car Corp.
Northern Pump Co. 105

Oakite Products, Inc. 90
Ohio Steel Foundry Co.
Ohmer Fare Register Co. 113

Oil Conservation Engineering Co.
Oil Products Appliance Co.
Oil Well Supply Co. 49
Oliver United Filters, Inc.
Oxweld Acetylene Co. 51

Parkersburg Rig & Reel Co. 59
Pennsylvania Pump Co.
Perfection Mfg. Co. 89
Petroleum Iron Works Co. 68
Pforzheimer & Co., Carl H.
Phillips Petroleum Co. 11
Pittsburgh-Des Moines Steel Co. 132
Pittsburgh Equitable Meter Co.
Platt Co., W. C. 137
Pressed Steel Tank Co.
Prest-O-Lite Co.
Producers & Refiners Corp.
Pure Oil Co.
Pyrene Mfg. Co.

Quincy Compressor Co.

Rand McNally & Co.
Reading Iron Co. 55
Reo Motor Car Co.
Roper Corp., Geo. D.
Roxana Petroleum Corp.

St. Louis Sticker Co.
Sall Bros. Co.
Service Station Equip. Co. 14
Seymour-Howard Corp.
Shaffer Oil & Refg. Co.
Sharpsville Boiler Works Co. 115
Shotwell Pump & Tank Co.
Shreveport Producing & Refg. Co.
Simms Oil Co.
Sinclair Refining Co. 120
Sistersville Tank & Boiler Works
Skelly Oil Co.
Sonneborn Sons, Inc., L.
Southwestern Engineering Corp. 71
Standard Boiler & Plate Iron Co.
Standard Garment Co.
Standard Lift Co.
Stoll Oil Refg. Co.
Sun Oil Company 3
Sun Shipbuilding & Dry Dock Co.
Superior Oil Works 106

Tagliabue Mfg. Co., C. J.
Taylor Instrument Companies
Texas Co.
Texas Pacific Coal & Oil Co. 88
Tokheim Oil Tank & Pump Co. 82
Transcontinental Oil Co. 103

Union Metal Mfg. Co.
United Filters Corp.
United Potteries Co. 118
United Supply Co.
U. S. Air Compressor Co.
Universal Oil Products Co. 62–63

Vacuum Oil Co.
Viking Pump Co. 95–116
Viscosity Oil Co.
Vogt Machine Co., Henry
Volcker Mfg. Co.
Vortex Mfg. Co. 94

Wadhams Oil Co.
Walworth Co.
Waverly Oil Works Co.
Wayne Co.
Westcott & Greis, Inc.
Wheaton Brass Works, A. W. 33
Wheeling Steel Corp.
Willock Oil Corp. 89
Wilson & Bennett Mfg. Co.
Winkler-Koch Eng. Co.

York Safe & Lock Co. 90
Youngstown Boiler & Tank Co. 105

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## Table of Contents

### The Week's News


| | Page |
|---|---|
| Gas Conservation Plan in New Santa Fe Springs Development—*By William E. Green* | 17 |
| New Q. D. A. Is Based Only on Service Station Price—*By Ward K. Halbert* | 21 |
| Little River Operators Give Battle to Foster-Reiter Oil Corp. | 23 |
| Effective Methods Used in Handling Collections of Refinery Accounts—*By J. F. McLaughlin* | 25 |
| Phillips Executives to Build Airplanes | 27 |
| Development Restrictions Put on Osage Lands Now | 28 |
| West Texas Refinery District to Obtain Reduced Rates to Indiana Territory—*By J. C. Chatfield* | 29 |
| Youngstown Jobbers Threaten to Sue for Profitable Gasoline Prices | 30 |
| Review of Late Production News | 32 |
| Daily Average Crude Oil Production and Imports | 34 |
| Big Gain in Production Foreseen Unless Wide spread Restriction Is Practiced *By Lawrence E. Smith* | 37 |
| Mid-Continent Completions | 42-48 |
| NATIONAL PETROLEUM NEWS' Weekly Western Refinery Figures | 133-136 |
| Refiners Watch Railroad Dispute, Strike Is Not Expected | 145 |


### Merchandising


| | |
|---|---|
| Crankcase Dilution and Engine Ills Laid to Imperfect Carburetion | 87 |
| Become "Open Shop," Chicago Stations Urged | 90 |
| Burner Association Lists Six Oils | 94 |
| Oil Company Attorneys Aid in Drafting Model Gasoline Tax Measure | 102 |


### Engineering


| | |
|---|---|
| Aluminum Stock Tanks Compared With Steel in Corrosion Tests—*By Paul Wagner* | 50 |
| Standardization of Safety Practice | 52 |
| Accounting Methods for Refiners, Article 5—*By Henry W. Ralph* | 64 |
| Oxidation Test for Lubricating Oils to Show How They Stand Up—*By Dr. Typke* | 70 |
| The Application of Gas and Gasoline Analysis to Plant Control—*By J. C. Burks* | 79 |
| How to Correct Oil Gravity and Volume for Temperature Changes | 110 |


### Departments


| | |
|---|---|
| Our Industry | 57 |
| Selected Bibliography on Petroleum Technology | 60, 61 |
| New Equipment | 75 |
| Visiting Around the Refineries | 76 |
| New Patents | 78 |
| Foreign Trade Opportunities | 91 |
| Roster of Oil Associations | 93 |
| The Editors' Viewpoint | 97, 100 |
| On the Lazy Bench | 106 |
| New Stations Building | 107 |
| Oil Company Finance | 146, 148 |


### Markets


| | |
|---|---|
| Refinery Price Tables | 122, 124 |
| Tank Wagon Price Tables | 126 |
| Crude Oil Prices, All Fields | 128, 131 |
| Complete Seaboard Markets | 141 |